

Radio-Frequency Devices

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Radio-Frequency Bipolar Small-Signal Transistors

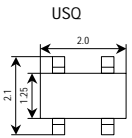
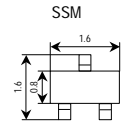
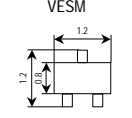
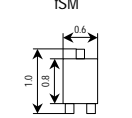
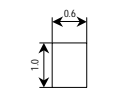
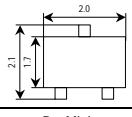
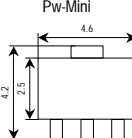
Radio-Frequency Bipolar Transistors

Part Number	Package	Applications	Absolute Maximum Ratings (Ta = 25°C)				Marking	TO-92 Equivalent Product	Remarks (Mini Transistors)	
			V _{CEO} (V)	I _C (mA)	P _C (mW)	T _J (°C)				
2SC2714		FM-band radio-frequency amps	30	20	100	125	Q□	2SC1923	2SC2668	
2SC2715		AM frequency converter, FM IF amps	30	50	150	125	R□	2SC380TM	2SC2669	
2SC2716		AM radio-frequency amps	30	100	150	125	F□	2SC941TM	2SC2670	
2SC3123		VHF TV frequency converters	20	50	150	125	HE	2SC3136	f _T = 1.4 GHz	
2SC5064		VHF/UHF-band low-noise amps	12	30	150	125	MA□	—	f _T = 7 GHz	
2SC5084		VHF/UHF-band low-noise amps	12	80	150	125	MC□	—	f _T = 7 GHz	
2SC5089		VHF/UHF-band low-noise amps	10	40	150	125	MD□	—	f _T = 10 GHz	
2SC5094		VHF/UHF-band low-noise amps	10	15	150	125	ME□	—	f _T = 10 GHz	
2SC5106		VHF/UHF oscillators	10	30	150	125	MF□	—	f _T = 6 GHz	
2SC5109		VHF/UHF oscillators	10	60	150	125	MG□	—	f _T = 5 GHz	
MT3S03A		VHF/UHF band, low voltage operation, low phase noise	5	40	150	125	MR	—	f _T = 10 GHz	
MT3S04A		VHF/UHF band, low voltage operation, low phase noise	5	40	150	125	AE	—	f _T = 7 GHz	
MT3S106		VHF/UHF band low noise, low distortion amps	6	80	700 (Note 1)	150	R2	—	f _T = 13 GHz	
2SC5087		VHF/UHF-band low-noise amps	12	80	150	125	C□	—	f _T = 7 GHz	
2SC5087R		VHF/UHF-band low-noise amps	12	80	150	125	ZP	—	f _T = 7 GHz	
2SC5092	VHF/UHF-band low-noise amps	10	40	150	125	D□	—	f _T = 10 GHz		
2SC5097	VHF/UHF-band low-noise amps	10	15	150	125	E□	—	f _T = 10 GHz		
MT4S03A	VHF/UHF band, low voltage operation, low phase noise	5	40	150	125	MR	—	f _T = 10 GHz		
MT4S04A	VHF/UHF band, low voltage operation, low phase noise	5	40	150	125	AE	—	f _T = 7 GHz		
MT4S06	VHF/UHF band, low voltage operation, low noise	5	15	150	125	AC	—	f _T = 10 GHz		
MT4S07	VHF/UHF band, low voltage operation, low noise	5	25	150	125	AD	—	f _T = 12 GHz		
2SC4215		FM-band radio-frequency amps	30	20	100	125	Q□	2SC1923	f _T = 550 MHz	
2SC4250		VHF TV frequency converters	20	50	100	125	HE	2SC3136	f _T = 1.4 GHz	
2SC5065		VHF/UHF-band low-noise amps	12	30	100	125	MA□	—	f _T = 7 GHz	
2SC5085		VHF/UHF-band low-noise amps	12	80	100	125	MC□	—	f _T = 7 GHz	
2SC5090		VHF/UHF-band low-noise amps	10	40	100	125	MD□	—	f _T = 10 GHz	
2SC5095		VHF/UHF-band low-noise amps	10	15	100	125	ME□	—	f _T = 10 GHz	
2SC5107		VHF/UHF oscillators	10	30	100	125	MF□	—	f _T = 6 GHz	
2SC5110		VHF/UHF oscillators	10	60	100	125	MG□	—	f _T = 5 GHz	
2SC5463		VHF/UHF-band low-noise amps	12	60	100	125	MX/MY	—	f _T = 7 GHz	
MT3S03AU		VHF/UHF band, low voltage operation, low phase noise	5	40	100	125	MR	—	f _T = 10 GHz	
MT3S04AU		VHF/UHF band, low voltage operation, low phase noise	5	40	100	125	AE	—	f _T = 7 GHz	
MT3S16U		UHF-band, low-voltage oscillators and amplifiers	5	60	100	125	T4	—	f _T = 4 GHz	
2SC5094			VHF/UHF-band low-noise amps	12	30	100	125	MA□	—	f _T = 7 GHz
2SC5084			VHF/UHF-band low-noise amps	12	80	150	125	MC□	—	f _T = 7 GHz
2SC5089			VHF/UHF-band low-noise amps	10	40	150	125	MD□	—	f _T = 10 GHz
2SC5094	VHF/UHF-band low-noise amps		10	15	150	125	ME□	—	f _T = 10 GHz	
2SC5106	VHF/UHF oscillators		10	30	150	125	MF□	—	f _T = 6 GHz	
2SC5109	VHF/UHF oscillators		10	60	150	125	MG□	—	f _T = 5 GHz	

□: Denotes a hFE class.

Note 1: Mounted on a ceramic board

- The products shown in bold are also manufactured in offshore fabs.
- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

Part Number	Package	Applications	Absolute Maximum Ratings (Ta = 25°C)				Marking	TO-92 Equivalent Product	Remarks	
			V _{CEO} (V)	I _c (mA)	P _c (mW)	T _j (°C)				
2SC5088		VHF/UHF-band low-noise amps	12	80	100	125	MC□	—	f _r = 7 GHz	
2SC5093		VHF/UHF-band low-noise amps	10	40	100	125	MD□	—	f _r = 10 GHz	
2SC5098		VHF/UHF-band low-noise amps	10	15	100	125	ME□	—	f _r = 10 GHz	
2SC5319		VHF/UHF-band low-noise amps	5	20	100	125	MT	—	f _r = 16 GHz	
MT4S03AU		VHF/UHF band, low voltage operation, low phase noise	5	40	100	125	MR	—	f _r = 10 GHz	
MT4S04AU		VHF/UHF band, low voltage operation, low phase noise	5	40	100	125	AE	—	f _r = 7 GHz	
MT4S06U		VHF/UHF band, low voltage operation, low noise	5	15	60	125	AC	—	f _r = 10 GHz	
MT4S07U		VHF/UHF band, low voltage operation, low noise	5	25	100	125	AD	—	f _r = 12 GHz	
MT4S32U		VHF/UHF band, low voltage operation, low noise	4.5	15	67.5	125	U4	—	f _r = 16 GHz	
2SC4915			FM-band radio-frequency amps	30	20	100	125	Q□	2SC1923	f _r = 550 MHz
2SC5066	VHF/UHF-band low-noise amps		12	30	100	125	M1/M2	—	f _r = 7 GHz	
2SC5086	VHF/UHF-band low-noise amps		12	80	100	125	M5/M6	—	f _r = 7 GHz	
2SC5091	VHF/UHF-band low-noise amps		10	40	100	125	M7/M8	—	f _r = 10 GHz	
2SC5096	VHF/UHF-band low-noise amps		10	15	100	125	M9/MA	—	f _r = 10 GHz	
2SC5108	VHF/UHF oscillators		10	30	100	125	MB/MC	—	f _r = 6 GHz	
2SC5111	VHF/UHF oscillators		10	60	100	125	MD/ME	—	f _r = 5 GHz	
2SC5322	VHF/UHF-band low-noise amps		5	10	100	125	MU	—	f _r = 15.5 GHz	
2SC5464	VHF/UHF-band low-noise amps		12	60	100	125	MX/MY	—	f _r = 7 GHz	
MT3S03AS	VHF/UHF band, low voltage operation, low phase noise		5	40	100	125	MR	—	f _r = 10 GHz	
MT3S04AS	VHF/UHF band, low voltage operation, low phase noise		5	40	100	125	AE	—	f _r = 7 GHz	
MT3S06S	VHF/UHF band, low voltage operation, low noise		5	15	60	125	AC	—	f _r = 10 GHz	
MT3S07S	VHF/UHF band, low voltage operation, low noise		5	25	100	125	AD	—	f _r = 12 GHz	
2SC4250FV			VHF TV frequency converters	20	50	150	125	HE	2SC3136	f _r = 1.4 GHz
MT3S03AFS			VHF/UHF band, low voltage operation, low phase noise	5	40	85 (Note 1)	125	00	—	f _r = 10 GHz
MT3S04AFS		VHF/UHF band, low voltage operation, low phase noise	5	40	85 (Note 1)	125	01	—	f _r = 7 GHz	
MT3S05FS		VHF/UHF band, low voltage operation, low phase noise	5	40	85 (Note 1)	125	02	—	f _r = 4.5 GHz	
MT3S06FS		VHF/UHF band, low voltage operation, low noise	5	15	85 (Note 1)	125	03	—	f _r = 10 GHz	
MT3S07FS		VHF/UHF band, low voltage operation, low noise	5	25	85 (Note 1)	125	04	—	f _r = 12 GHz	
MT3S11FS		VHF/UHF band, low voltage operation, low phase noise	6	40	85 (Note 1)	125	08	—	f _r = 6 GHz	
MT3S12FS		VHF/UHF band, low voltage operation, low phase noise	6	40	85 (Note 1)	125	09	—	f _r = 7 GHz	
MT3S14FS		VHF/UHF band, low voltage operation, low noise	2.5	30	85 (Note 1)	125	0H	—	f _r = 11 GHz	
MT3S16FS		UHF-band, low-voltage oscillators and amplifiers	5	60	85 (Note 1)	125	0K	—	f _r = 4 GHz	
MT3S35FS		VHF/UHF band, low voltage operation, low noise	4.5	24	100 (Note 1)	150	20	—	f _r = 20 GHz	
MT3S36FS		VHF/UHF band, low voltage operation, low noise	4.5	36	100 (Note 1)	150	21	—	f _r = 19 GHz	
MT3S37FS		VHF/UHF band, low voltage operation, low noise	4.5	50	100 (Note 1)	150	22	—	f _r = 19 GHz	
MT3S41FS	VHF/UHF band, low voltage operation, low noise	4.5	80	100 (Note 1)	150	26	—	f _r = 15 GHz		
MT3S11CT		VHF/UHF band, low voltage operation, low phase noise	6	40	105 (Note 1)	125	08	—	f _r = 6 GHz	
MT3S15TU *		VHF/UHF-band low-noise amps	6	80	900 (Note 2)	150	T3	—	f _r = 11.5 GHz	
MT3S19TU *		VHF/UHF-band low-noise amps	6	80	900 (Note 2)	150	T6	—	f _r = 11 GHz	
MT3S20TU *		VHF/UHF-band low-noise amps	12	80	900 (Note 2)	150	MU	—	f _r = 7 GHz	
MT3S20P *		VHF/UHF-band low-noise amps	12	80	1800 (Note 2)	150	MU	—	f _r = 7 GHz	
MT3S21P *		VHF/UHF-band low-noise amps	6	80	1800 (Note 2)	150	T2	—	f _r = 9 GHz	
MT3S22P *		VHF/UHF-band low-noise amps	6	80	1800 (Note 2)	150	T5	—	f _r = 8.5 GHz	

□: Denotes a hrf class.

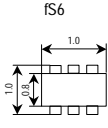
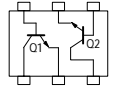
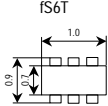
*: New product

Note 1: When mounted on a glass-epoxy PCB board

Note 2: Mounted on a ceramic board

- The products shown in bold are also manufactured in offshore fabs.
- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

Dual Radio-Frequency Bipolar Transistor

Part Number	Package	Absolute Maximum Ratings (Ta = 25°C)			Structure (Q1/Q2)	fr (Q1/Q2) (GHz)	Internal Connections	Marking	
		VCE0 (Q1/Q2) (V)	Ic (Q1/Q2) (mA)	Pc★ (mW)					
MT6L63FS		5/6	25/40	110 (Note 1)	MT3S07FS/MT3S11FS	12/4.5		18	
MT6L64FS		4.5/6	24/40	110 (Note 1)	MT3S35FS/MT3S11FS	19.5/6		19	
MT6L65FS		4.5/6	36/40	110 (Note 1)	MT3S36FS/MT3S11FS	20/6		1F	
MT6L67FS *		4.5/6	36/80	110 (Note 1)	MT3S36FS/MT3S106FS	20/8.5		1J	
MT6L68FS		5/6	15/40	110 (Note 1)	MT3S06FS/MT3S11FS	10/4.5		1K	
MT6L70FS		4.5/6	20/80	110 (Note 1)	MT3S107FS/MT3S106FS	16.5/8.5		1U	
MT6L71FS		5/6	25/40	105 (Note 1)	MT3S07FS/MT3S11AFS	12/4.5		1W	
MT6L72FS		4.5/6	36/40	105 (Note 1)	MT3S36FS/MT3S11AFS	19/4.5		1X	
MT6L75FS *		5/6	25/80	110 (Note 1)	MT3S07FS/MT3S106FS	12/8.5		52	
MT6L76FS *		5/6	15/80	110 (Note 1)	MT3S06FS/MT3S106FS	10/8.5		53	
MT6L77FS *		6/6	40/80	110 (Note 1)	MT3S11FS/MT3S106FS	6/8.5		54	
MT6L78FS		6/6	40/40	105 (Note 1)	MT3S11FS/MT3S11AFS	6/6		55	
MT6L77FST *			6/6	40/80	140	MT3S11FS/MT3S106FS		6/8.5	54

★Pc: Total power dissipation

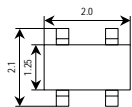
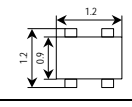
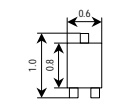
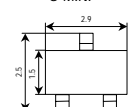
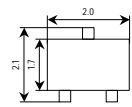
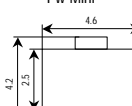
*: New product

Note 1: When mounted on a glass-epoxy PCB board

◆The internal connection diagrams only show the general configurations of the circuits.

• Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

SiGe HBTs

Part Number	Package	Applications	Absolute Maximum Ratings (Ta = 25°C)				Marking	Remarks
			VCE0 (V)	Ic (mA)	Pc (mW)	Tj (°C)		
MT4S100U		VHF/UHF band, low voltage operation, low noise	3	15	100	150	P6	fr = 22 GHz
MT4S101U		VHF/UHF band, low voltage operation, low noise	3	10	100	150	P7	fr = 21 GHz
MT4S102U *		UHF/SHF band, low voltage operation, low noise	3	20	100	150	P8	fr = 24 GHz
MT4S104U *		UHF/SHF band, low voltage operation, low noise	3	10	100	150	P1	fr = 23 GHz
MT4S200U *		UHF/SHF band, low voltage operation, low noise	4	35	140 (Note 1)	150	P2	fr = 30 GHz
MT4S100T		VHF/UHF band, low voltage operation, low noise	3	15	100	150	P6	fr = 23 GHz
MT4S101T		VHF/UHF band, low voltage operation, low noise	3	10	100	150	P7	fr = 23 GHz
MT4S102T *		UHF/SHF band, low voltage operation, low noise	3	20	100	150	P8	fr = 25 GHz
MT4S104T *		UHF/SHF band, low voltage operation, low noise	3	10	100	150	P1	fr = 25 GHz
MT4S200T *		UHF/SHF band, low voltage operation, low noise	4	35	100	150	P2	fr = 30 GHz
MT3S106FS *		UHF/SHF band, low voltage operation, low noise	6	80	100 (Note 1)	150	41	fr = 8.5 GHz
MT3S107FS *		UHF/SHF band, low voltage operation, low noise	4.5	20	100 (Note 1)	150	42	fr = 16.5 GHz
MT3S111 *		VHF/UHF band, low noise, low distortion	6	100	700 (Note 1)	150	R5	fr = 11.5 GHz
MT3S111TU *		VHF/UHF band, low noise, low distortion	6	100	800 (Note 1)	150	R5	fr = 10 GHz
MT3S111P *		VHF/UHF band, low noise, low distortion	6	100	1000 (Note 1)	150	R5	fr = 8 GHz

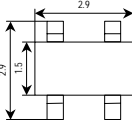
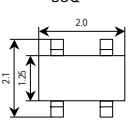
Note 1: When mounted on a glass-epoxy PCB board

*: New product

• Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

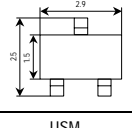
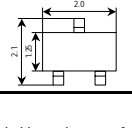
Radio-Frequency Small-Signal FETs

Radio-Frequency MOSFETs

Part Number	Package	Applications	Electrical Characteristics (Ta = 25°C)					Marking	Equivalent Product (Leaded Type)
			V _{DS} (V)	I _D (mA)	P _D (mW)	I _{DSS} (mA)	Y _{fs} (mS) Typ.		
3SK232		TV UHF radio-frequency amps	12.5	30	150	0 to 0.1	21	UO	—
3SK291		TV UHF radio-frequency amps	12.5	30	150	0 to 0.1	26	UF	—
3SK292		TV VHF/UHF radio-frequency amps	12.5	30	150	0 to 0.1	23.5	UV	—
3SK249		TV UHF radio-frequency amps	12.5	30	100	0 to 0.1	21	UO	
3SK293		TV UHF radio-frequency amps	12.5	30	100	0 to 0.1	26	UF	
3SK294		TV VHF/UHF radio-frequency amps	12.5	30	100	0 to 0.1	23.5	UV	

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

Radio-Frequency Junction FETs

Part Number	Package	Applications	Electrical Characteristics (Ta = 25°C)					Marking	Equivalent Product (Leaded Type)
			V _{GDO} V _{GDS} ◊ (V)	I _G (mA)	P _D (mW)	I _{DSS} (mA)	Y _{fs} (mS) Typ.		
2SK210		FM radio-frequency amps	-18	10	100	3.0 to 24	7	Y□	
2SK211		FM radio-frequency amps	-18	10	150	1.0 to 10	9	K□	
2SK711		AM radio-frequency amps	-20 ◊	10	150	6 to 32	25	RB□	2SK709
2SK1875		AM radio-frequency amps	-20 ◊	10	100	6 to 32	25	RB□	2SK709

□: Denotes a loss class.

- The products shown in bold are also manufactured in offshore fabs.
- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

Radio-Frequency Power MOSFETs

Radio-Frequency Power MOSFETs

Part Number	Package	Applications	Absolute Maximum Ratings (Tc = 25°C)			Min	Po (W)		
			Vbss (V)	Pb (W)	Ib (A)		Test Conditions		
							VDD (V)	f (MHz)	Pi (W)
RFM08U9X *	PW-X	UHF/VHF Professional radios	36	20	5	7.5	9.6	520	0.5
2SK3075	PW-X		30	20	5	7.5	9.6	520	0.5
2SK3074	PW-MINI		30	3	1	0.63	9.6	520	0.02
2SK3476	PW-X		20	20	3	7.0	7.2	520	0.5
2SK3475	PW-MINI		20	3	1	0.63	7.2	520	0.02
2SK4037	PW-X	GMRS	12	20	3	3.55	6.0	470	0.3
2SK2855	PW-MINI	UHF/VHF Professional radios	10	0.5	1.0	1.26	6.0	849	0.2
2SK2854	PW-MINI		10	0.5	0.5	0.2	6.0	849	0.02
2SK3079A	PW-X	FRS/GMRS	10	20	3	2.24	4.5	470	0.1
2SK3756	PW-MINI		7.5	3	1	1.26	4.5	470	0.1
2SK3078A	PW-MINI		10	3	0.5	0.63	4.5	470	0.1
2SK3077	USQ		Driver	10	0.25	0.1	0.032	4.8	915
2SK3656	PW-MINI	FRS/GMRS	5	3	0.5	0.50	3.6	470	0.02

• Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

*: New product

Radio-Frequency Bipolar Power Transistors

Part Number	Package	Applications	Absolute Maximum Ratings (Tc = 25°C)			Min	Po (W)		
			Vcbo (V)	Pc (W)	Ic (A)		Test Conditions		
							Vcc (V)	f (MHz)	Pi (W)
2SC2782A	2-13C1A	175 MHz Marine radios Professional radios Amateur radios	36	220	20	80	12.5	175	18

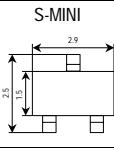
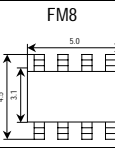
• Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

Part Number	Package	Applications	Absolute Maximum Ratings (Tc = 25°C)			Max	Pi (WPEP)		
			Vcbo (V)	Pc (W)	Ic (A)		Test Conditions		
							Vcc (V)	f (MHz)	Po (WPEP)
2SC2510A	2-13B1A	27 to 50 MHz CB radios Amateur radios	60	250	20	9	28	28	150
2SC2879A	2-13B1A		45	250	25	10	12.5	28	100
2SC2290A	2-13B1A		45	175	20	4	12.5	28	60

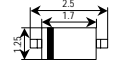
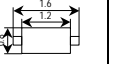
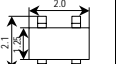
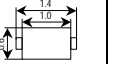
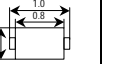
• Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

Radio-Frequency Diodes



Variable Capacitance Diodes (Diodes for Electronic Tuning)

Part Number		V _R (V)	C _T (pF)	V _R (V)	C _T (pF)	V _R (V)	Applications
Package							
S-MINI	FM8						
		15	28 to 32	3	12 to 14	9	FM car radios, portable radios
1SV225		32	18.5 to 21	3	6.6 to 7.7	30	FM HI-FI tuners
1SV228		15	28.5 to 32.5	3	11.7 to 13.7	8	FM car radios, portable radios
	HN1V02H	16	435 to 540	1	19.9 to 26.7	8	AM car radios, portable radios
JDV3C34		12	67.9 to 72.1	2	26.1 to 27.8	6	FM tuners

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

Part Number					V _R (V)	C _T (pF)	V _R (V)	C _T (pF)	V _R (V)	Applications
Package										
USC	ESC	USQ	sESC	fSC						
										
1SV214	1SV278B				30	14.16 to 16.25	2	2.11 to 2.43	25	VHF/UHF TV tuners
1SV215					30	26 to 32	2	2.5 to 3.2	25	CATV tuners
1SV229	1SV279				15	14 to 16	2	5.5 to 6.5	10	VHF/UHF VCOs
	1SV286				30	14.5 to 16.1	2	1.56 to 1.86	20	CATV converters
1SV231					30	41 to 49.5	2	2.7 to 3.4	25	CATV tuners
1SV232					30	28 to 32	2	2.75 to 3.1	25	CATV tuners
1SV239	1SV280				15	3.8 to 4.7	2	1.5 to 2.0	10	L-Band VCOs
1SV245	1SV309				30	3.31 to 4.55	2	0.61 to 0.77	25	BS tuners
1SV262	1SV282				34	33 to 38	2	2.6 to 3.0	25	CATV tuners
1SV269	1SV283B				34	29 to 34	2	2.5 to 2.9	25	CATV tuners
1SV270	1SV281				10	15 to 17	1	7.3 to 8.7	4	VHF/UHF VCOs
1SV276	1SV284				10	15 to 17	1	7.0 to 8.5	4	VHF/UHF VCOs
				JDV2S07FS	10	4.0 to 4.9	1	1.85 to 2.35	4	L-Band VCOs
1SV288	1SV290B				30	41 to 49.5	2	2.5 to 3.2	25	CATV tuners
1SV304	1SV305	JDV4P08U	JDV2S08S	JDV2S08FS	10	17.3 to 19.3	1	5.3 to 6.6	4	VHF/UHF VCOs
1SV310	1SV311				10	9.7 to 11.1	1	4.45 to 5.45	4	VHF/UHF VCOs
	1SV314			JDV2S10FS	10	7.3 to 8.4	0.5	2.75 to 3.4	2.5	VHF/UHF VCOs
1SV322	1SV323				10	26 to 30	1	6 to 7.1	4	VCOs
1SV324	1SV325				10	44 to 49.5	1	9.2 to 12.2	4	VCOs
	JDV2S36E				10	44 to 49.5	1	5.4 to 7.3	6	VCOs
	1SV331				10	17 to 19	1	4.25 to 5.43	4	VCOs
	1SV329			JDV2S13FS	10	5.7 to 6.7	1	1.85 to 2.45	4	VHF/UHF VCOs
	JDV2S05E		JDV2S05S	JDV2S05FS	10	3.85 to 4.55	1	1.94 to 2.48	4	VHF/UHF VCOs
	JDV2S71E				30	6 to 7.2	1	0.49 to 0.64	25	UHF/SHF tuners

- The products shown in bold are also manufactured in offshore fabs.
- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

Part Number		V _R (V)	C _T (pF)	V _R (V)	C _T (pF)	V _R (V)	Applications
Package							
fSC	SC2						
							
JDV2S25FS *	JDV2S25SC *	10	5.62 to 5.99	1	1.91 to 2.12	4	VHF/UHF VCOs
JDV2S26FS *	JDV2S26SC *	10	15.35 to 16.31	1	5.27 to 5.60	4	VHF/UHF VCOs
JDV2S29FS *	JDV2S29SC *	10	3.59 to 3.87	1	1.26 to 1.40	4	VHF/UHF VCOs
	JDV2S31SC *	10	9.93 to 10.77	1	4.37 to 4.93	4	VHF/UHF VCOs
	JDV2S38SC *	10	7 to 7.74	0.5	2.76 to 3.12	2.5	VHF/UHF VCOs

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.
- *: New product

Radio-Frequency Switching Diodes

Part Number	Applications	V _R (V)	I _R (Max)		V _F (Max)		C _T (Typ.)		r _s (Typ.)			Package	
			(μA)	V _R (V)	(V)	I _F (mA)	(pF)	V _R (V)	(Ω)	I _F (mA)	f (MHz)		
1SS314	TV band switch	30	0.1	15	0.85	2	0.7	6	0.5	2	100	USC	
1SS381												ESC	
JDS2S03S												sESC	
1SS268												S-MINI	
1SS269												S-MINI	
1SS312		Twin	30	0.1	15	0.85	2	0.8	6	0.6	2	100	USM
1SS313													USM
1SS364													SSM
1SV128													S-MINI
1SV271													USC
JDP3C04TU *	Switch, ATT	50	0.1	50	0.95 (Typ.)	50	0.25	50	7	10	100	S-MINI	
1SV307												USC	
1SV308												ESC	
JDP2S01E												ESC	
JDP2S04E												ESC	
JDP2S02AS		sESC											
JDP2S02AFS		fSC											
JDP2S05FS		fSC											
JDP2S08SC		Switch	30	0.1	30	0.95	50	0.21	1	1	10	100	SC2
1SV172		Switch, ATT	50	0.1	50	0.95 (Typ.)	50	0.25	50	3	10	100	S-MINI
1SV252	USM												
1SV237	SMO												
1SV312	USQ												
JDP4P02AT	Twin												30

• The products shown in bold are also manufactured in offshore fabs.

*: New product

• Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

Radio-Frequency Schottky Barrier Diodes

Part Number	Applications	V _R • V _{RM} (V)	I _F (mA)	V _F (Typ.)		C _T (Typ.)		Package
				(V)	I _F (mA)	(pF)	V _R (V)	
1SS154	VHF to S-band mixers	6	30	0.5	10	0.8	0	S-MINI (Single)
1SS271		6	30	0.5	10	0.8	0	S-MINI (Twin)
JDH2S03S *		30	100	0.37 (Max)	1	1.25	1	sESC
1SS295	UHF MIX	4	30	0.25	2	0.6	0.2	S-MINI (Twin)
1SS315		• 5	30	0.25	2	0.6	0.2	USC
JDH2S01FS		4	25	0.25	2	0.6	0.2	fSC
JDH3D01S		4	25	0.25	2	0.6	0.2	SSM (Twin)
JDH3D01FV		4	25	0.25	2	0.6	0.2	VESM (Twin)
JDH2S02FS		10	10	0.24	1	0.3	0.2	fSC
JDH2S02SC		10	10	0.24	1	0.3	0.2	SC2

• Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

*: New product

Small-Signal MMICs (Radio-Frequency Cell Packs)

Wideband Amp ICs

Part Number	Package	Applications	Functions	Electrical Characteristics	Supply Voltage (V)
TA4000F	SM6	BS tuners, communications equipment, VHF/UHF amps	Bipolar linear wideband amp	B/W = 1.3 GHz Gp = 15dB @f = 400 MHz, Vcc = 5 V	5.0
TA4001F	SMQ	BS tuners, communications equipment, VHF/UHF amps	Bipolar linear wideband amp	B/W = 2.4 GHz Gp = 12.5dB @f = 500 MHz, Vcc = 5 V	5.0
TA4002F	SMQ	BS tuners, communications equipment, VHF/UHF amps	Bipolar linear wideband amp	B/W = 1.3 GHz Gp = 23dB @f = 500 MHz, Vcc = 5 V	5.0
TA4004F	SMV	BS tuners, communications equipment, VHF/UHF amps	Bipolar linear wideband amp	B/W = 1.2 GHz Gp = 10.5dB @f = 500 MHz, Vcc = 2 V	2.0 to 5.0
TA4011AFE	ESV	Communications equipment, VHF/UHF amps	Bipolar linear wideband amp	B/W = 2.4 GHz, Po1dB = -6dBmW @Vcc = 2 V	2.0
TA4011FU	USV	Communications equipment, VHF/UHF amps	Bipolar linear wideband amp	B/W = 2.4 GHz, Po1dB = -6dBmW @Vcc = 2 V	2.0
TA4012AFE	ESV	Communications equipment, VHF/UHF amps	Bipolar linear wideband amp	B/W = 2.0 GHz, Po1dB = 0dBmW @Vcc = 2 V	2.0
TA4012FU	USV	Communications equipment, VHF/UHF amps	Bipolar linear wideband amp	B/W = 2.0 GHz, Po1dB = 0dBmW @Vcc = 2 V	2.0
TA4018F	SM8	CATV, IF variable amps	Bipolar differential gain control amp	S21 ² = 11dB, Gr = 37dB @Vcc = 5 V, f = 45 MHz	5.0
TA4019F	SM8	CATV, IF amps	Bipolar differential amp	S21 ² = 30dB, IM3 = 53dB @Vcc = 5 V, f = 45 MHz, Pin = -35dBmW	5.0
TA4022F *	SM8	Communications equipment, VHF/UHF amps	Bipolar linear differential amp	S21 ² = 19dB, IM3 = 58dB @Vcc = 5 V, f = 45 MHz, Pin = -21dBmW, Zl = 250 Ω	5.0
TA4023F *	SM8	Communications equipment, VHF/UHF amps	Bipolar linear differential amp	S21 ² = 28dB, IM3 = 51dB @Vcc = 5 V, f = 45 MHz, Pin = -33dBmW, Zl = 250 Ω	5.0
TA4020FT	TESQ	VHF/UHF amps	Bipolar low-noise amp	S21 ² = 15dB, NF = 0.95dB @Vcc = 3 V, f = 1.5 GHz	3.0
TA4024CT *	CST8	VHF/UHF amps	Bipolar linear differential amp	S21 ² = 26dB, IM3 = 53dB, Icc = 26 mA @Vcc = 3.3 V, f = 45 MHz	3.0 to 3.3
TA4025CT *	CST8	VHF/UHF amps	Bipolar linear differential amp	S21 ² = 25dB, IM3 = 52dB, Icc = 21 mA @Vcc = 3.3 V, f = 45 MHz	3.0 to 3.3
TA4026CT *	CST8	VHF/UHF amps	Bipolar linear differential amp	S21 ² = 26dB, IM3 = 54dB, Icc = 35 mA @Vcc = 3.3 V, f = 45 MHz	3.0 to 3.3
TA4027CT *	CST8	VHF/UHF amps	Bipolar linear differential amp	S21 ² = 35dB, IM3 = 55dB, Icc = 25 mA @Vcc = 3.3 V, f = 45 MHz	3.0 to 3.3
TA4028CT *	CST8	VHF/UHF amps	Bipolar linear differential amp	S21 ² = 35dB, IM3 = 54dB, Icc = 15 mA @Vcc = 3.3 V, f = 45 MHz	3.0 to 3.3
TA4029CTC *	CST6C	VHF/UHF amps	Bipolar low-noise amp with a pass-through mode	S21 ² = 13dB, IIP3 = -5dBmW @Vcc = 2.5 V, f = 1 GHz (LNA_ON) S21 ² = -2dB @Vcc = 2.5 V, f = 1 GHz (LNA_OFF)	2.3 to 3.3
TA4029TU **	UF6	VHF/UHF amps	Bipolar low-noise amp with a pass-through mode	S21 ² = 13dB, IIP3 = -5dBmW @Vcc = 2.5 V, f = 1 GHz (LNA_ON) S21 ² = 13dB @Vcc = 2.5 V, f = 1 GHz (LNA_OFF)	2.3 to 3.3
TA4031CT **	CST8	VHF/UHF amps	Bipolar linear differential gain control amp	S21 ² = 53dB, IM3 = 54dB, NF = 3.5dB @Vcc = 3.3 V/VAGC = 2.5 V, f = 45 MHz GCR = 53dB	3.0 to 3.3
TB7600CTC *	CST6C	Low-noise VHF/UHF amp	Pass-through mode	S21 ² = 11.5dB, NF = 1.7dB, Icc = 2.5 mA @LNA_ON	2.3 to 3.3
TB7600TU *	UF6	Low-noise VHF/UHF amp	Pass-through mode	S21 ² = -2.5dB, Icc < 1 μA @LNA_OFF @Vcc = 2.5 V, f = 1 GHz	2.3 to 3.3
TB7601CTC *	CST6C	Low-noise VHF/UHF amp	Pass-through mode	S21 ² = 13.5dB, NF = 1.4dB, Icc = 3.5 mA @LNA_ON	2.3 to 3.3
TB7601TU *	UF6	Low-noise VHF/UHF amp	Pass-through mode	S21 ² = -2.5dB, Icc < 1 μA @LNA_OFF @Vcc = 2.5 V, f = 1 GHz	2.3 to 3.3
TB7602CTC *	CST6C	Low-noise VHF/UHF amp	Pass-through mode	S21 ² = 15.5dB, NF = 1.3dB, Icc = 6 mA @LNA_ON	2.3 to 3.3
TB7602TU *	UF6	Low-noise VHF/UHF amp	Pass-through mode	S21 ² = -2.5dB, Icc < 1 μA @LNA_OFF @Vcc = 2.5 V, f = 1 GHz	2.3 to 3.3
TB7603CTC *	CST6C	Low-noise VHF/UHF amp	Pass-through mode	Inverted logic version of the TB7600CTC/TU	2.3 to 3.3
TB7603TU *	UF6	Low-noise VHF/UHF amp	Pass-through mode	Inverted logic version of the TB7601CTC/TU	2.3 to 3.3
TB7604CTC *	CST6C	Low-noise VHF/UHF amp	Pass-through mode	Inverted logic version of the TB7601CTC/TU	2.3 to 3.3
TB7604TU *	UF6	Low-noise VHF/UHF amp	Pass-through mode	Inverted logic version of the TB7602CTC/TU	2.3 to 3.3
TB7605CTC *	CST6C	Low-noise VHF/UHF amp	Pass-through mode	Inverted logic version of the TB7602CTC/TU	2.3 to 3.3
TB7605TU *	UF6	Low-noise VHF/UHF amp	Pass-through mode	Inverted logic version of the TB7602CTC/TU	2.3 to 3.3

• Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

*: New product

** : Under development

Frequency Converters

Part Number	Package	Applications	Functions	Electrical Characteristics	Supply Voltage (V)
TA4107F	SM8	CATV analog digital tuner	Bipolar linear down-converter	C • Gain = -0.5dB, IIP3 = 12dBmW @f _{RF} = 1 GHz, f _{LO} = 950 MHz, V _{CC} = 4.5 V	4.5

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

Radio-Frequency Power Amp ICs

Modules (Analog)

Part Number	Package	Structure	Applications		Features				Test Conditions	Power Supply (V)	
					Frequency Range f (MHz)	Po (Min) (W)	η_T (Min) (%)	ρ_i (Max)	Pi (mW)	VGG	VDD
S-AV36A	5-53P	Modules	VHF	60-W FM professional radios	134 to 174	80	45	3	50	5	12.5
S-AV32A	5-53P			50-W FM professional radios	134 to 174	60	45	3	50	5	12.5
S-AV33A	5-53P			25-W FM professional radios	134 to 174	32	45	3	50	5	12.5
S-AV35A	5-32G			25-W FM marine radios	154 to 162	32	50	3	10	5	12.5
S-AV37A	5-32G			25-W FM marine radios	154 to 162	32	50	3	10	5	12.5
S-AV40 *	5-32G			30-W FM professional radios	220 to 246	30	40	3	50	5	12.5
S-AU82ASL *	5-53P		UHF	50-W FM professional radios	350 to 390	60	40	3	50	5	12.5
S-AU82AVL	5-53P				378 to 440	60	40	3	50	5	12.5
S-AU82AL	5-53P				400 to 470	60	40	3	50	5	12.5
S-AU82AH	5-53P				450 to 520	60	40	3	50	5	12.5
S-AU93A	5-53P			50-W FM professional radios	430 to 500	60	40	3	50	5	12.5
S-AU83AL	5-53P			25-W FM professional radios	400 to 470	32	40	3	50	5	12.5
S-AU83AH	5-53P				450 to 520	32	40	3	50	5	12.5
S-AU94	5-23F				5-W FM handheld professional radios	450 to 490	7.55	40	4.5	25	4

• Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

*: New product

Modules (Digital)

Part Number	Package	Structure	Applications		Features		Test Conditions			Power Supply (V)	
					Frequency Range f (MHz)	ACP (dB) (Max)	I _{DD} (A)	Po (dBmW)	Pi (dBmW) (Note 1)	VDD	VGG
S-AV34	5-32F	Modules	VHF	Digital professional radios	150 to 165	-34	2.8	39	adjusted	10.8	adjusted
S-AV38	5-23F				260 to 266	-35	1.7	35		7.2	
S-AU86	5-28C		900 MHz	Digital MCA	889 to 915	-39	1.7	35		12	
S-AU100 *	5-23F				905 to 915	-37	1.8	35		10.8	

Note 1: Modulating signal: $\pi/4$ DQPSK ($\alpha = 0.5$, 32 kbps), Bandwidth: 16 kHz, Detuning frequency: 25 kHz

*: New product

• Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

Microwave Semiconductors

GaAs FETs (Power GaAs FETs)

Part Number	Appropriate Frequency Band (GHz)	P _{1dB} (dBm) Typ.	G _{1dB} (dB) Typ.	η add (%) Typ.	f (test) (GHz)	V _{DS} (V)
S8834	2 to 10	21.0	9.0	28	8	10
S8835		24.0	8.0	26	8	10
S8836A		29.5	7.5	30	8	10
S8836B	6 to 9	32.0	7.0	28	8	10
S8837A						
S8850A	2 to 18	21.5	9.0	21	15	10
JS8850A-AS ☆		20.5	9.0	20	15	8
		21.5	9.0	21	15	10
		21.0	8.5	19	18	
		20.5	9.0	20	15	8
		20.0	8.5	18	18	
S8851		24.0	8.0	26	15	
JS8851-AS ☆		24.0	8.0	26	15	10
		23.0	7.0	18	18	
S8853		28.0	7.0	25	15	10
JS8853-AS ☆		28.0	7.0	25	15	10
		27.0	6.0	18	18	
S8855		31.5	6.5	23	15	10
JS8855-AS ☆	31.5	7.0	23	15	10	
	31.0	6.0	18	18		

☆: Dry-packed

Note: JS denotes a chip product.

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

GaAs MMICs

Part Number	Frequency Band (GHz)	P _{1dB} (dBm) Typ.	G _{1dB} (dB) Typ.	I _{DD} (A) Typ.	IM ₃ (dBc) Typ.	V _{DD} (V)
TMD1925-3	1.9 to 2.5	35.0	29.0	1.6	—	10
TMD5872-2	5.8 to 7.2	34.0	29.0	1.2	-45 ■	10
TMD7185-2	7.1 to 8.5	33.0	28.0	1.4	-45 ■	10
TMD1013-1-431	9.5 to 12.0	33.0	25.0	1.4	-45 ●	10
TMD1414-2C	13.75 to 14.5	34.5	26.0	1.4	—	7

IM₃ :

●: 2-tone test P₀ = 19.0dBm (single-carrier level)

■: 2-tone test P₀ = 22.0dBm (single-carrier level)

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

(L-, S-Band Partially Matched Power GaAs FETs)

Part Number	Frequency Band (GHz)	P _{1dB} (dBm)	G _{1dB} (dB)	η add (%)
		Typ.	Typ.	Typ.
V _{DS} = 12 V				
TPM1919-60	1.9	48.0	13.0	40
TPM2323-60	2.3	48.0	10.0	39
TPM2626-60	2.6	48.0	10.0	39

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

Part Number	Frequency Band (GHz)	P _{2dB} (dBm)	G _{2dB} (dB)	η add (%)
		Typ.	Typ.	Typ.
V _{DS} = 12 V				
TPM2828-9 #	2.8 to 2.9	39.5	11.5	30
TPM2828-60 ##		48.0	7.5	29

#: I_{DS}Set = 2.0 A

##: I_{DS}Set = 10.0 A

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

(X-Band Internally Matched Power GaN HEMT)

Part Number	Frequency Band (GHz)	P _{out} (dBm)	GL (dB)	η add (%)	V _{DS} (V)
		at Pin = 41dBm Typ.	Typ.	Typ.	
TGI8596-50	8.5 to 9.6	47.0	9.0	31	24

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

(Ku-Band Internally Matched Power GaN HEMT)

Part Number	Frequency Band (GHz)	P _{out} (dBm)	GL (dB)	η add (%)	V _{DS} (V)
		at Pin = 42dBm Typ.	at Pin = 20dBm Typ.	Typ.	
TGI1414-50L #	14.0 to 14.5	47.0	8.0	29	24

#: I_{DS}Set = 2.0 A

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

(X-, Ku-Band Internally Matched Power GaAs FETs)

Part Number	Frequency Band (GHz)	P _{1dB} (dBm)	G _{1dB} (dB)	η add (%)	V _{DS} (V)
		Typ.	Typ.	Typ.	
TIM8596-2	8.5 to 9.6	33.5	7.5	24	9
TIM8596-4		36.5	7.5	24	
TIM8596-8		39.5	6.0	22	
TIM8596-15		42.0	7.0	31	
TIM8996-30 #	8.9 to 9.6	45.0	7.0	27	10
TIM0910-2	9.5 to 10.5	33.5	7.5	24	9
TIM0910-4		36.5	7.5	24	
TIM0910-5		37.5	7.0	25	
TIM0910-8		39.5	6.0	22	
TIM0910-10		40.5	6.0	23	
TIM0910-15L		42.0	7.0	31	
TIM1011-2L	10.7 to 11.7	33.5	7.5	24	9
TIM1011-4L		36.5	7.5	24	
TIM1011-5L		37.5	7.0	25	
TIM1011-8L		39.5	6.0	22	
TIM1011-10L		40.5	6.0	23	
TIM1011-15L		42.0	7.0	31	
TIM1112-2	11.7 to 12.7	33.5	7.5	24	9
TIM1112-4		36.5	7.5	24	
TIM1112-8		39.5	5.0	20	
TIM1112-15L		42.0	6.0	29	
TIM1213-2L	12.7 to 13.2	33.5	7.5	24	9
TIM1213-4L		36.5	7.5	24	
TIM1213-8L		39.5	5.0	20	
TIM1213-10L		40.5	6.0	23	
TIM1213-15L		42.0	6.0	29	
TIM1414-2-252	13.75 to 14.5	33.0	6.0	20	9
TIM1414-4-252		36.0	5.5	19	
TIM1414-5-252		37.0	5.5	20	
TIM1414-7-252		38.0	6.0	23	
TIM1414-8-252		39.0	5.0	18	
TIM1314-9L		39.5	6.0	26	
TIM1414-10LA-252		39.5	5.5	18	
TIM1414-15-252		40.5	5.5	20	
TIM1414-18L-252		42.0	6.0	24	
TIM1314-30L #		45.0	5.0	20	
TIM1414-2L	14.0 to 14.5	33.5	6.5	23	9
TIM1414-4LA		36.5	6.5	23	
TIM1414-5L		37.5	6.0	23	
TIM1414-7		38.5	6.5	27	
TIM1414-8L		39.5	5.0	20	
TIM1414-9L		39.5	6.0	26	
TIM1414-10LA		40.5	6.0	23	
TIM1414-15L		42.0	6.0	29	
TIM1414-18L		42.5	6.0	28	
TIM1414-30L #		45.0	5.5	21	
TIM1415-2	14.5 to 15.0	33.5	6.0	22	9

#: I_{DS}Set = 7.0 A for TIM1314/1414-30L, TIM8996-30

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

(C-Band Internally Matched Power GaAs FETs)

Part Number	Frequency Band (GHz)	P _{1dB} (dBm)	G _{1dB} (dB)	η add (%)	IM ₃ (dBc)	
		Typ.	Typ.	Typ.	Typ.	
V _{DS} = 10 V						
TIM3742-4SL-341 ##	3.3 to 3.6	36.5	10.0	37	-45◎	
TIM3742-8SL-341 ##		39.5	10.0	37	-45△	
TIM3742-16SL-341 ##		42.5	10.0	37	-45■	
TIM3742-30SL-341 ##		45.0	10.0	42	-45★	
TIM3742-45SL-341 ##		46.5	10.0	43	-45◇	
TIM3438-12UL	3.4 to 3.8	41.5	12.5	42	-47▽	
TIM3438-16SL		42.5	12.5	38	-45■	
TIM3742-4SL	3.7 to 4.2	36.5	10.5	37	-45◎	
TIM3742-4UL		36.5	12.0	38	-47◎	
TIM3742-8SL		39.5	10.0	36	-45△	
TIM3742-8UL		39.5	11.0	37	-47△	
TIM3742-12UL		41.5	11.5	41	-47▼	
TIM3742-16SL		42.5	9.5	36	-45■	
TIM3742-16UL		42.5	10.5	37	-47■	
TIM3742-25UL		44.5	10.5	38	-47☆	
TIM3742-30SL		45.0	10.0	41	-45★	
TIM3742-35SL		45.5	10.0	40	-45◇	
TIM3742-45SL		46.5	10.5	42	-45◇	
TIM4450-4SL		4.4 to 5.0	36.5	10.0	36	-45◎
TIM4450-4UL			36.5	11.0	37	-47◎
TIM4450-8SL			39.5	9.5	36	-45△
TIM4450-8UL			39.5	10.5	37	-47△
TIM4450-12UL	41.5		10.5	40	-47▼	
TIM4450-16SL	42.5		8.5	35	-45■	
TIM4450-16UL	42.5		10.0	36	-47■	
TIM4450-25UL	44.5		10.0	37	-47☆	
TIM4450-35SL	45.5		9.5	39	-45◇	
TIM4450-45SL	46.5		9.5	41	-45◇	
TIM4450-60SL #	48.0		9.5	42	-45□	
TIM5053-4SL	5.0 to 5.3		36.5	9.5	36	-45◎
TIM5053-8SL			39.5	9.0	35	-45△
TIM5053-16SL			42.5	8.5	35	-45■
TIM5053-35SL	45.5		9.0	39	-45◇	
TIM5359-4SL	5.3 to 5.9	36.5	9.5	36	-45◎	
TIM5359-4UL		36.5	10.5	37	-47◎	
TIM5359-8SL		39.5	9.0	35	-45△	
TIM5359-8UL		39.5	10.0	36	-47△	
TIM5359-16SL		42.5	8.5	35	-45■	
TIM5359-16UL		42.5	10.0	36	-47■	
TIM5359-35SL		45.5	8.5	38	-45◇	
TIM5359-45SL		46.5	9.0	41	-45◇	
TIM5359-60SL #		48.0	9.0	42	-45□	
TIM5359-80SL ###		49.0	7.5	36	-30●	
TIM5964-4SL		5.9 to 6.4	36.5	9.0	35	-45◎
TIM5964-4UL			36.5	10.0	37	-47◎
TIM5964-6UL			38.5	10.0	40	-47▽
TIM5964-8SL			39.5	8.5	35	-45△
TIM5964-8UL			39.5	10.0	36	-47△
TIM5964-12UL	41.5		10.0	40	-47▼	
TIM5964-16SL	42.5		8.0	34	-45■	
TIM5964-16UL	42.5		10.0	36	-47■	
TIM5964-25UL	44.5		10.0	37	-47☆	
TIM5964-30SL	45.0		8.0	38	-45★	
TIM5964-30UL	45.0		10.0	41	-47▲	
TIM5964-35SLA	45.5		9.0	39	-45◇	
TIM5964-45SL	46.5		9.0	41	-45◇	
TIM5964-60SL #	48.0		8.5	41	-45□	
TIM5964-80SL ###	49.0		7.0	35	-30●	

#: I_{DS}set = 9.5 A for TIM4450/5359/5964/6472/7179/7785-60SL, TIM5964-60SL-422

##: G_{1dB}(min.) for TIM3742-4SL-341, TIM3742-8SL-341, TIM3742-16SL-341, TIM3742-30SL-341, TIM3742-45SL-341
G_{1dB}(min.) for TIM5964-4SL-422, TIM5964-8SL-422, TIM5964-16SL-422, TIM5964-35SLA-422, TIM5964-60SL-422

###: I_{DS}set = 10.0 A for TIM5359-80SL, TIM5964-80SL

- Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

Part Number	Frequency Band (GHz)	P _{1dB} (dBm)	G _{1dB} (dB)	η add (%)	IM ₃ (dBc)	
		Typ.	Typ.	Typ.	Typ.	
V _{DS} = 10 V						
TIM5964-4SL-422 ##	5.85 to 6.75	36.5	8.0	35	-45◎	
TIM5964-8SL-422 ##		39.5	8.0	35	-45△	
TIM5964-16SL-422 ##		42.5	8.0	35	-45■	
TIM5964-35SLA-422 ##		45.5	8.0	39	-45◇	
TIM5964-60SL-422 #, ##		48.0	7.0	40	-45□	
TIM6472-4SL	6.4 to 7.2	36.5	8.0	34	-45◎	
TIM6472-4UL		36.5	9.5	36	-47◎	
TIM6472-6UL		38.5	9.5	39	-47▽	
TIM6472-8SL		39.5	7.5	33	-45△	
TIM6472-8UL		39.5	9.5	36	-47△	
TIM6472-12UL		41.5	9.5	39	-47▼	
TIM6472-16SL		42.5	7.0	32	-45■	
TIM6472-16UL		42.5	9.5	36	-47■	
TIM6472-25UL		44.5	9.5	37	-47☆	
TIM6472-30SL		45.0	7.0	36	-45★	
TIM6472-35SL		45.5	8.0	37	-45◇	
TIM6472-45SL		46.5	8.0	39	-45◇	
TIM6472-60SL #		48.0	7.5	39	-45□	
TIM7179-4SL		7.1 to 7.9	36.5	7.5	33	-45◎
TIM7179-4UL			36.5	9.0	35	-47◎
TIM7179-6UL	38.5		9.0	39	-47▽	
TIM7179-8SL	39.5		7.0	32	-45△	
TIM7179-8UL	39.5		9.0	35	-47△	
TIM7179-12UL	41.5		9.0	39	-47▼	
TIM7179-16SL	42.5		6.5	31	-45■	
TIM7179-16UL	42.5		8.5	35	-47■	
TIM7179-25UL	44.5		8.5	36	-47☆	
TIM7179-35SL	45.5		6.5	34	-45◇	
TIM7179-45SL	46.5		6.5	36	-45◇	
TIM7179-60SL #	48.0		6.5	37	-45□	
TIM7785-4SL	7.7 to 8.5		36.5	6.5	32	-45◎
TIM7785-4UL			36.5	8.5	35	-47◎
TIM7785-6UL			38.5	8.5	38	-47▽
TIM7785-8SL		39.5	6.0	30	-45△	
TIM7785-8UL		39.5	8.5	35	-47△	
TIM7785-12UL		41.5	8.5	38	-47▼	
TIM7785-16SL		42.5	5.5	29	-45■	
TIM7785-16UL		42.5	8.5	35	-47■	
TIM7785-25UL		44.5	8.5	36	-47☆	
TIM7785-30SL		45.0	6.0	34	-45★	
TIM7785-35SL		45.5	6.0	33	-45◇	
TIM7785-45SL		46.5	6.0	35	-45◇	
TIM7785-60SL #		48.0	6.0	36	-45□	

IM₃:

- ◎: 2-tone test Po = 25.5dBm (single-carrier level)
- △: 2-tone test Po = 28.5dBm (single-carrier level)
- : 2-tone test Po = 31.5dBm (single-carrier level)
- ▲: 2-tone test Po = 34.0dBm (single-carrier level)
- ◇: 2-tone test Po = 35.0dBm (single-carrier level)
- : 2-tone test Po = 36.5dBm (single-carrier level)
- ▼: 2-tone test Po = 27.5dBm (single-carrier level)
- ▽: 2-tone test Po = 30.5dBm (single-carrier level)
- ☆: 2-tone test Po = 33.5dBm (single-carrier level)
- ★: 2-tone test Po = 34.5dBm (single-carrier level)
- ◇: 2-tone test Po = 35.5dBm (single-carrier level)
- : 2-tone test Po = 42.0dBm (single-carrier level)