

# General-Purpose Small-Signal Transistors

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## Low-Frequency Small-Signal Amplification

Applications and features	Package											
	TO-92 (SC-43)		MINI		S-MINI (SC-59)		USM (SC-70)		SSM		ESM	
General-purpose	2SC1815	2SA1015	2SC2458	2SA1048	<b>2SC2712</b>	<b>2SA1162</b>	2SC4116	2SA1586	2SC4738	2SA1832	2SC4738F	2SA1832F
	2SC2240	2SA970	2SC2459	2SA1049	<b>2SC2713</b>	<b>2SA1163</b>	2SC4117	2SA1587				
General-purpose (low noise)	2SC1815(L)	2SA1015(L)	2SC2458(L)	2SA1048(L)	2SC3324	2SA1312						
EQ differential amp	2SC732TM											
Main differential amp	2SC2240	2SA970			2SC3324	2SA1312						
	2SC2240	2SA970	2SC2459	2SA1049	2SC3324	2SA1312						
Low-frequency amplifier	2SC2120	2SA950	2SC2710	2SA1150	<b>2SC3265</b>	<b>2SA1298</b>						
	2SC1959	2SA562TM			<b>2SC2859</b>	<b>2SA1182</b>	2SC4118	2SA1588				
Impedance converter	2SK246	2SJ103	2SK330	2SJ105	2SK208	2SJ106	2SK879	2SJ144				
	2SK30ATM		2SK118		2SK208		2SK879					
Low-noise audio amplifier	2SK117		2SK184		2SK209		2SK880					
Muting	2SC2878		2SC3327		<b>2SC3326</b>		2SC4213					
High $\beta$	2SC3112		2SC3113		<b>2SC3295</b>		2SC4666					
High-speed switch	2SC752(G)TM				2SC3437		2SC4667					
Low $\Gamma_{bb}$	2SC3329	2SA1316										
EQ Amp Diff	2SK170	2SJ74	2SK370	2SJ108								
	2SK369		2SK371									
Strobo	2SC5471											
	<b>**2SC5853</b>		<b>*2SC5720</b>		<b>**2SC5766</b>							
	2SC5854		*2SC5765									

Note: Please ask for the nearest Toshiba distributor about the production works of bold product numbers which are listed the above.

\*: New product

\*\* : Under development

## Low-Frequency Amplification, Switching, Constant-Current Load Impedance Conversion

N-Channel						P-Channel				Yfs  (mS) I <sub>bss</sub> = 5 mA	R <sub>os</sub> (ON) ( $\Omega$ )
TO-92	MINI	Super MINI	USM	SMV	USV	TO-92	MINI	Super MINI	USM		
2SK246	2SK330	2SK208	2SK879	—	—	<b>2SJ103</b>	2SJ105	2SJ106	2SJ144	4	320/270
2SK373	2SK367	2SK368	—	—	—		—	—	—	—	19
2SK362	2SK365	2SK209	2SK880	2SK2145★	<b>*2SK3320★</b>	—	—	—	—	30	50/40
2SK364	2SK366	—	—	—	—	2SJ104	2SJ107	—	—	40	36
2SK363	2SK372	—	—	—	—	—	—	—	—		

★: 2SK209 × 2 (common source)

\*: New product

Note: Please ask for the nearest Toshiba distributor about the production works of bold product numbers which are listed the above.

# High-Speed Switching MOSFETs (S-MOS)

## Single

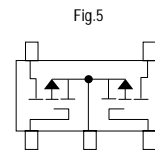
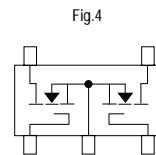
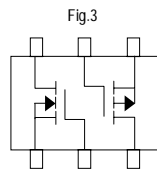
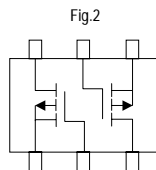
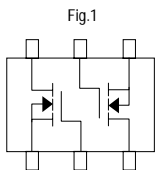
Polarity	Absolute Maximum Ratings			Package								R <sub>DS(ON)</sub> (Ω)			
	V <sub>DS</sub> (V)	V <sub>GS</sub> (V)	I <sub>D</sub> (mA)	TO-92	MINI	S-MINI	TSM	US6	USM	SSM	ESM	TESM	typ.	max	@V <sub>GS</sub> (V)
Nch	20	±10	100						* SSM3K16FU	* SSM3K16FS		* SSM3K16TE	5.2	15	1.5
Pch	-20	±10	-100						* SSM3J16FU	* SSM3J16FS		* SSM3J16TE	18	45	-1.5
Nch	20	+10	100			2SK2823			2SK2824	2SK2825			10	40	1.5
Nch	20	+10	50			2SK1828			2SK1829	2SK1830			20	40	2.5
Pch	-20	-7	-50			2SJ345			2SJ346	2SJ347			20	40	-2.5
Nch	20	+10	100			2SK2033			2SK2034	2SK2035			8	12	2.5
Nch	20	+10	100			2SK2036			2SK2037				4	6	2.5
Nch	20	+10	100								SSM3K03FE	* SSM3K03TE	4	12	2.5
Pch	-20	-10	-100								** SSM3J03FE		12	25	-2.5
Nch	20	+10	100						SSM3K04FU	SSM3K04FS	SSM3K04FE		4	12	2.5
(Gate-Source built-in Resistor)															
Nch	30	±20	100			* SSM3K15F			* SSM3K15FU	* SSM3K15FS		* SSM3K15TE	4	7	2.5
Pch	-30	±20	-100			* SSM3J15F			* SSM3J15FU	* SSM3J15FS		* SSM3J15TE	14	32	-2.5
Nch	30	±20	200			2SK2009							1.2	2	2.5
Pch	-30	±20	-200			2SJ305							2.4	4	-2.5
Nch	20	±12	400						SSM3K05FU				0.85	1.2	2.5
Pch	-20	±12	-200						SSM3J05FU				3.2	4	-2.5
Nch	30	±20	400						SSM3K09FU				0.8	1.2	4
Pch	-30	±20	-200						SSM3J09FU				3.3	4.2	-4
Nch	50	+10	50		2SK1825	2SK1826			2SK1827				20	50	4
Pch	50	-7	-50		2SJ342	2SJ343			2SJ344				20	50	-4
Nch	50	±7	100						* SSM3K17FU				22	40	2.5
Nch	60	±20	200	2SK982	2SK1061	2SK1062							0.6	1	10
Pch	-60	±20	-200	2SJ148	2SJ167	2SJ168							1.3	2	-10
Nch	20	±12	1100						SSM6K06FU				0.16	0.21	-2.5
Pch	-20	±12	-650						SSM6J06FU				0.55	0.7	-2.5
Nch	30	±20	1500						SSM6K07FU				0.17	0.22	4
Pch	-30	±20	-800						SSM6J07FU				0.57	0.8	-4
Nch	20	±12	1600						SSM6K08FU				0.1	0.14	2.5
Pch	-20	±12	-1300						* SSM6J08FU				0.2	0.26	-2.5
Pch	-12	±8	-3000						* SSM3J13T				0.07	0.095	-2.5
Nch	30	±10	1000			SSM3K02F							0.18	0.25	2.5
			2500						* SSM3K02T						
Pch	-30	±10	-600			SSM3J02F							0.55	0.7	-2.5
			-1500						* SSM3J02T						
Nch	30	±10	1300			SSM3K01F							0.115	0.15	2.5
			3200						SSM3K01T						
Pch	-30	±10	-700			SSM3J01F							0.4	0.6	-2.5
			-1700						SSM3J01T						
Nch	30	±20	3000						* SSM3K12T				0.105	0.15	4.5
Pch	-30	±20	-2700						* SSM3J14T				0.106	0.145	-4.5
Nch	30	±20	4000						* SSM3K14T				0.045	0.057	4.5

\*: New product  
 \*\*: Under development

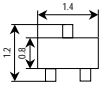
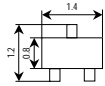
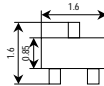
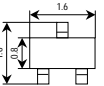
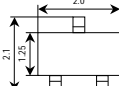
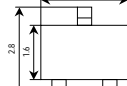
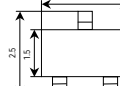
# Dual

Polarity	Absolute Maximum Ratings			Package				R <sub>DS(on)</sub>			Internal FET
	V <sub>oss</sub> (V)	V <sub>gss</sub> (V)	I <sub>D</sub> (mA)	ESV	ES6	USV	US6	( $\Omega$ )		@V <sub>GS</sub> (V)	
								typ.	max		
N-ch × 2	20	+10	50				HN1K02FU (Fig. 1)	20	40	2.5	2SK1829 × 2
P-ch × 2	-20	-7	-50				HN1J02FU (Fig. 2)	20	40	-2.5	2SJ346 × 2
N-ch × 2	20	+10	100			HN4K03JU (Fig. 4)	HN1K03FU (Fig. 1)	8	12	2.5	2SK2034 × 2
N-ch × 2	50	+10	50				HN1K04FU (Fig. 1)	20	50	4	2SK1827 × 2
N-ch × 2	20	+10	100				HN1K05FU (Fig. 1)	10	40	1.5	2SK2824 × 2
N-ch × 2	20	+10	100				HN1K06FU (Fig. 1)	3.5	6	2.5	2SK2037 × 2
N-ch × 2	20	±10	100	* SSM5N16FE (Fig. 4)	* SSM6N16FE (Fig. 1)	* SSM5N16FU (Fig. 4)	* SSM6N16FU (Fig. 1)	5.2	15	1.5	SSM3K16FU × 2
P-ch × 2	-20	±10	-100	* SSM5P16FE (Fig. 5)	* SSM6P16FE (Fig. 2)	* SSM5P16FU (Fig. 5)	* SSM6P16FU (Fig. 2)	18	45	-1.5	SSM3J16FU × 2
N-ch × 2	20	±12	400			* SSM5N05FU (Fig. 4)	* SSM6N05FU (Fig. 1)	0.85	1.2	2.5	SSM3K05FU × 2
P-ch × 2	-20	±12	-200			* SSM5P05FU (Fig. 5)	* SSM6P05FU (Fig. 2)	3.2	4	-2.5	SSM3J05FU × 2
N-ch × 2	20	+10	100	* SSM5N03FE (Fig. 4)	* SSM6N03FE (Fig. 1)			4	12	2.5	SSM3K03FE × 2
N-ch × 2	30	±20	100	* SSM5N15FE (Fig. 4)	* SSM6N15FE (Fig. 1)	* SSM5N15FU (Fig. 4)	* SSM6N15FU (Fig. 1)	4	7	2.5	SSM3K15FU × 2
P-ch × 2	-30	±20	-100	* SSM5P15FE (Fig. 5)	* SSM6P15FE (Fig. 2)	* SSM5P15FU (Fig. 5)	* SSM6P15FU (Fig. 2)	14	32	-2.5	SSM3J15FU × 2
N-ch × 2	30	±20	400				* SSM6N09FU (Fig. 1)	0.8	1.2	4	SSM3K09FU × 2
P-ch × 2	-30	±20	-200				* SSM6P09FU (Fig. 2)	3.3	4.2	-4	SSM3J09FU × 2
N-ch × 2	50	±7	100				* SSM6N17FU (Fig. 1)	22	40	2.5	SSM3K17FU × 2
N-ch + P-ch	20	+10	50				HN1L02FU (Fig. 3)	20	40	2.5	2SK1829 + 2SJ346
	-20	-7	-50					20	40	-2.5	
N-ch + P-ch	50	+10	50				HN1L03FU (Fig. 3)	20	50	4	2SK1827 + 2SJ346
	-20	-7	-50					20	40	-2.5	
N-ch + P-ch	20	±12	400				SSM6L05FU (Fig. 3)	0.85	1.2	2.5	SSM3K05FU + SSM3J05FU
	-20	±12	-200					3.2	4	-2.5	
N-ch + P-ch	30	±20	400				* SSM6L09FU (Fig. 3)	0.8	1.2	4	SSM3K09FU + SSM3J09FU
	-30	±20	-200					3.3	4.2	-4	

\*: New product



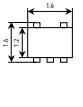
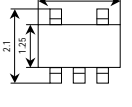
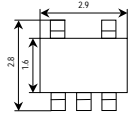
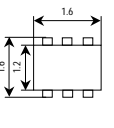
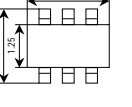
# Small-Signal Transistors

Classification	V <sub>CEO</sub> (V)	I <sub>C</sub> (mA)	Single type													
			TESM2		TESM		ESM		SSM		USM		TSM		S-MINI	
																
(mm)		(mm)		(mm)		(mm)		(mm)		(mm)		(mm)				
		NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	
General-purpose	50	150	* 2SC4738TT		* 2SC4738FT	* 2SA1832FT	2SC4738F	2SA1832F	2SC4738	2SA1832	2SC4116	2SA1586			2SC2712	2SA1162
	30	500									2SC4118	2SA1588			2SC2859	2SA1182
	50	500													2SC3325	2SA1313
Low noise	120	100									2SC4117	2SA1587			2SC2713	2SA1163
															2SC3324	2SA1312
High current	12	400					2SC5376F		2SC5376	2SA1955						
	12	500									2SC5233	2SA1954			2SC5232	2SA1953
	15	800														2SA1362
	25	800													2SC3265	2SA1298
	30	800													2SC4210	2SA1621
	10	2000														
	20	2000														
	10	5000												* 2SC5766		
High breakdown voltage	80	300													2SC4209	2SA1620
High h <sub>FE</sub>	50	150									2SC4666				2SC3295	
Muting	20	300									2SC4213				2SC3326	
High-speed switching	15	200									2SC4667				2SC3437	
High breakdown voltage	200	50													2SC3138	2SA1255
	250	50														
	300	100													2SC4497	2SA1721
Darlington	40	300													2SC2532	

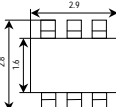
Note: Please ask for the nearest Toshiba distributor about the production works of bold product numbers which are listed the above.

\*: New product

# Small-Signal Transistors (continued)

Classification	V <sub>CEO</sub> (V)	I <sub>C</sub> (mA)	Dual type												
			ESV		USV		SMV		ES6		US6				
															
PNP+	NPN	PNP	NPN	PNP	PNP+	NPN	PNP	PNP+	NPN	PNP	PNP+	NPN	PNP	PNP+	
General-purpose	50	150	* HN4B01JE	2SC4944	2SA1873 * HN4A56JU	2SC4207	2SA1618		* HN1C01FE * HN2C01FE	* HN1A01FE * HN2A01FE	* HN1B04FE	<b>HN1C01FU</b> HN2C01FU * HN3C56FU	<b>HN1A01FU</b> HN2A01FU	HN1B01FU <b>HN1B04FU</b> * HN3B02FU	
	30	500						* HN4B04J							
	50	500													
Low noise	120	100				* HN4C06J * HN4C51J	* HN4A06J * HN4A51J	* HN4B06J							
				*HN4C05JU											
High current	12	400		*HN4C05JU											
	12	500													
	15	800													
	25	800				* HN4C08J	* HN4A08J								
	30	800													
	10	2000													
	20	2000													
High breakdown voltage	80	300													
	50	150													
Muting	20	300										HN1C03FU			
High-speed switching	15	200										* HN3C61FU			
High breakdown voltage	200	50													
	250	50													
	300	100													
Darlington	40	300													

Note: Please ask for the nearest Toshiba distributor about the production works of bold product numbers which are listed the above.

SM6  (mm)			MINI		TO-92	
NPN	PNP	PNP+ NPN	NPN	PNP	NPN	PNP
HN1C01F	HN1A01F * HN3A56F	HN1B01F HN3B01F	2SC2458	2SA1048	2SC1815	2SA1015
		* HN1B04F			2SC1959	2SA562TM
* HN1C07F	* HN1A07F					
* HN3C51F	* HN3A51F		2SC2459	2SA1049	2SC2240	2SA970
	* HN1A02F					
			2SC2710	2SA1150	2SC2120	2SA950
					2SC3279	2SA1300
			2SC3267	2SA1297	2SC3266	2SA1296
			* 2SC5720		* 2SC5853	
					2SC5471	
			* 2SC5765		* 2SC5854	
					2SC1627	2SA817
			2SC3113		2SC3112	
HN1C03F			2SC3227		2SC2878	
					2SC752(G)TM	
					2SC3333	2SA1320
					2SC2551	2SA1091
					2SC982TM	

\*: New product

# Bias Resistor Built-in Transistors (BRTs)

## Single (General-Purpose)

Maximum Ratings		V <sub>CEO</sub> (V)	20		50											
		IC(mA)	50		100											
Built-in resistor (K $\Omega$ )		ISM			TESM			ESM			SSM			USM		
R1	R2	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP			
4.7	4.7	** RN1101FS	** RN2101FS	* RN1101FT	* RN2101FT	RN1101F	RN2101F	RN1101	RN2101	RN1301	RN2301					
10	10	** RN1102FS	** RN2102FS	* RN1102FT	* RN2102FT	RN1102F	RN2102F	RN1102	RN2102	RN1302	RN2302					
22	22	* RN1103FS	* RN2103FS	* RN1103FT	* RN2103FT	RN1103F	RN2103F	RN1103	RN2103	RN1303	RN2303					
47	47	* RN1104FS	* RN2104FS	* RN1104FT	* RN2104FT	RN1104F	RN2104F	RN1104	RN2104	RN1304	RN2304					
2.2	47	** RN1105FS	** RN2105FS	* RN1105FT	* RN2105FT	RN1105F	RN2105F	RN1105	RN2105	RN1305	RN2305					
4.7	47	* RN1106FS	* RN2106FS	* RN1106FT	* RN2106FT	RN1106F	RN2106F	RN1106	RN2106	RN1306	RN2306					
10	47	** RN1107FS	** RN2107FS	* RN1107FT	* RN2107FT	RN1107F	RN2107F	RN1107	RN2107	RN1307	RN2307					
22	47	** RN1108FS	** RN2108FS	* RN1108FT	* RN2108FT	RN1108F	RN2108F	RN1108	RN2108	RN1308	RN2308					
47	22	** RN1109FS	** RN2109FS	* RN1109FT	* RN2109FT	RN1109F	RN2109F	RN1109	RN2109	RN1309	RN2309					
4.7	$\infty$	* RN1110FS	* RN2110FS	* RN1110FT	* RN2110FT	RN1110F	RN2110F	RN1110	RN2110	RN1310	RN2310					
10	$\infty$	* RN1111FS	* RN2111FS	* RN1111FT	* RN2111FT	RN1111F	RN2111F	RN1111	RN2111	RN1311	RN2311					
22	$\infty$	* RN1112FS	* RN2112FS	* RN1112FT	* RN2112FT	RN1112F	RN2112F	RN1112	RN2112	RN1312	RN2312					
47	$\infty$	* RN1113FS	* RN2113FS	* RN1113FT	* RN2113FT	RN1113F	RN2113F	RN1113	RN2113	RN1313	RN2313					
1	10			* RN1114FT	* RN2114FT	RN1114F	RN2114F	RN1114	RN2114	RN1314	RN2314					
2.2	10			* RN1115FT	* RN2115FT	RN1115F	RN2115F	RN1115	RN2115	RN1315	RN2315					
4.7	10			* RN1116FT	* RN2116FT	RN1116F	RN2116F	RN1116	RN2116	RN1316	RN2316					
10	4.7			* RN1117FT	* RN2117FT	RN1117F	RN2117F	RN1117	RN2117	RN1317	RN2317					
47	10			* RN1118FT	* RN2118FT	RN1118F	RN2118F	RN1118	RN2118	RN1318	RN2318					
100	100			* RN1130FT	* RN2130FT	* RN1130F	* RN2130F									
100	$\infty$			* RN1131FT	* RN2131FT	* RN1131F	* RN2131F									
200	$\infty$			* RN1132FT	* RN2132FT	* RN1132F	* RN2132F									

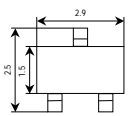
Note: Please ask for the nearest Toshiba distributor about the production works of bold product numbers which are listed the above.

## Single (High-current and Muting SW)

Maximum Ratings		V <sub>CEO</sub> (V)	High Current				Muting			
		IC(mA)	500		800		300			
Built-in resistor (K $\Omega$ )		USM			S-MINI			MINI		
R1	R2	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	
1	1	* RN1321A	* RN2321A	RN1421	RN2421	RN1221	RN2221			
2.2	2.2	* RN1322A	* RN2322A	RN1422	RN2422	RN1222	RN2222			
4.7	4.7	* RN1323A	* RN2323A	RN1423	RN2423	RN1223	RN2223			
10	10	* RN1324A	* RN2324A	RN1424	RN2424	RN1224	RN2224			
0.47	10	* RN1325A	* RN2325A	RN1425	RN2425	RN1225	RN2225			
1	10	* RN1326A	* RN2326A	RN1426	RN2426	RN1226	RN2226			
2.2	10	* RN1327A	* RN2327A	RN1427	RN2427	RN1227	RN2227			
5.6	$\infty$							RN1441	RN1241	
10	$\infty$							RN1442	RN1242	
22	$\infty$							RN1443	RN1243	
2.2	$\infty$							RN1444	RN1244	

\*: New product

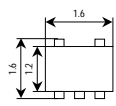
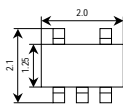


50					
100					
S-MINI		MINI		TO-92	
					
NPN	PNP	NPN	PNP	NPN	PNP
RN1401	RN2401	RN1201	RN2201	RN1001	RN2001
RN1402	RN2402	RN1202	RN2202	RN1002	RN2002
RN1403	RN2403	RN1203	RN2203	RN1003	RN2003
RN1404	RN2404	RN1204	RN2204	RN1004	RN2004
RN1405	RN2405	RN1205	RN2205	RN1005	RN2005
RN1406	RN2406	RN1206	RN2206	RN1006	RN2006
RN1407	RN2407	RN1207	RN2207	RN1007	RN2007
RN1408	RN2408	RN1208	RN2208	RN1008	RN2008
RN1409	RN2409	RN1209	RN2209	RN1009	RN2009
RN1410	RN2410	RN1210	RN2210	RN1010	RN2010
RN1411	RN2411	RN1211	RN2211	RN1011	RN2011
RN1412	RN2412				
RN1413	RN2413				
RN1414	RN2414				
RN1415	RN2415				
RN1416	RN2416				
RN1417	RN2417				
RN1418	RN2418				

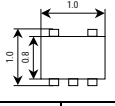
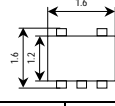
\*: New product

\*\*\*: Under development

Dual (5pin)

Classification	Maximum Ratings		Internal Transistor				ESV			USV		
	V <sub>CEO</sub> (V)	I <sub>c</sub> (mA)	Q1		Q2							
			(KΩ)		(KΩ)		(mm)			(mm)		
			R1	R2	R1	R2	NPN × 2	PNP × 2	NPN + PNP	NPN × 2	PNP × 2	NPN + PNP
General Purpose	50 (-50)	100 (-100)	4.7	4.7	4.7	4.7	RN1701JE	RN2701JE		RN1701	RN2701	
			10	10	10	10	RN1702JE	RN2702JE	**RN47A3JE	RN1702	RN2702	RN47A3
			22	22	22	22	RN1703JE	RN2703JE	**RN47A2JE	RN1703	RN2703	RN47A2
			47	47	47	47	RN1704JE	RN2704JE		RN1704	RN2704	
			2.2	47	2.2	47	RN1705JE	RN2705JE		RN1705	RN2705	
			4.7	47	4.7	47	RN1706JE	RN2706JE		RN1706	RN2706	
			10	47	10	47	RN1707JE	RN2707JE		RN1707	RN2707	
			22	47	22	47	RN1708JE	RN2708JE		RN1708	RN2708	
			47	22	47	22	RN1709JE	RN2709JE		RN1709	RN2709	
			4.7	-	4.7	-	RN1710JE	RN2710JE	RN47A1JE	RN1710	RN2710	RN47A1
			10	-	10	-	RN1711JE	RN2711JE		RN1711	RN2711	
			22	-	22	-						
			47	-	47	-						
			1	10	1	10					RN2714	
			2.2	10	2.2	10						
			4.7	10	4.7	10						
			10	4.7	10	4.7						
			47	10	47	10						
			47	47	10	47			**RN47A4JE			RN47A4
			47	47	4.7	10			**RN47A5JE			RN47A5
Muting	20	300	2.2	-	2.2	-						

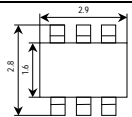
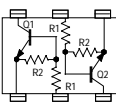
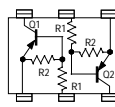
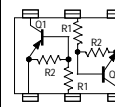
Dual (6pin)

Classification	Maximum Ratings		Internal Transistor				fS6				ES6			
	V <sub>CEO</sub> (V)	I <sub>c</sub> (mA)	Q1		Q2									
			(KΩ)		(KΩ)		(mm)				(mm)			
			R1	R2	R1	R2	NPN × 2	PNP × 2	NPN × 2	PNP × 2	NPN × 2	PNP × 2	NPN × 2	PNP × 2
General Purpose	50 (-50)	100 (-100)	4.7	4.7	4.7	4.7	**RN1961FS	**RN2961FS	**RN1901FS	**RN2901FS	RN1901FE	RN2901FE	RN1961FE	RN2961FE
			10	10	10	10	**RN1962FS	**RN2962FS	**RN1902FS	**RN2902FS	RN1902FE	RN2902FE	RN1962FE	RN2962FE
			22	22	22	22	* RN1963FS	* RN2963FS	**RN1903FS	**RN2903FS	RN1903FE	RN2903FE	RN1963FE	RN2963FE
			47	47	47	47	* RN1964FS	* RN2964FS	**RN1904FS	**RN2904FS	RN1904FE	RN2904FE	RN1964FE	RN2964FE
			2.2	47	2.2	47	**RN1965FS	**RN2965FS	**RN1905FS	**RN2905FS	RN1905FE	RN2905FE	RN1965FE	RN2965FE
			4.7	47	4.7	47	* RN1966FS	* RN2966FS	**RN1906FS	**RN2906FS	RN1906FE	RN2906FE	RN1966FE	RN2966FE
			10	47	10	47	**RN1967FS	**RN2967FS	**RN1907FS	**RN2907FS	RN1907FE	RN2907FE	RN1967FE	RN2967FE
			22	47	22	47	**RN1968FS	**RN2968FS	**RN1908FS	**RN2908FS	RN1908FE	RN2908FE	RN1968FE	RN2968FE
			47	22	47	22	**RN1969FS	**RN2969FS	**RN1909FS	**RN2909FS	RN1909FE	RN2909FE	RN1969FE	RN2969FE
			4.7	-	4.7	-	* RN1970FS	* RN2970FS	**RN1910FS	**RN2910FS	RN1910FE	RN2910FE	RN1970FE	RN2970FE
			10	-	10	-	* RN1971FS	* RN2971FS	**RN1911FS	**RN2911FS	RN1911FE	RN2911FE	RN1971FE	RN2971FE
			22	-	22	-	* RN1972FS	* RN2972FS	**RN1912FS	**RN2912FS				
			47	-	47	-	* RN1973FS	* RN2973FS	**RN1913FS	**RN2913FS				
			1	10	1	10								
			2.2	10	2.2	10								
			4.7	10	4.7	10								
			10	4.7	10	4.7								
			47	10	47	10								
			2.2	47	2.2	47								
			47	47	2.2	47								
22	22	10	10											

Note: Please ask for the nearest Toshiba distributor about the production works of bold product numbers which are listed the above.



Dual (6pin) (continued)

Classification	Maximum Ratings		Internal Transistor				SM6		
	V <sub>CE0</sub>	I <sub>c</sub>	Q1		Q2		 (mm)		
	(V)	(mA)	(K $\Omega$ )		(K $\Omega$ )		NPN $\times$ 2	PNP $\times$ 2	NPN + PNP
			R1	R2	R1	R2			
General Purpose	50 (-50)	100 (-100)	4.7	4.7	4.7	4.7	<b>RN1601</b>	<b>RN2601</b>	<b>RN4601</b>
			10	10	10	10	<b>RN1602</b>	<b>RN2602</b>	<b>RN4602</b>
			22	22	22	22	<b>RN1603</b>	<b>RN2603</b>	<b>RN4603</b>
			47	47	47	47	<b>RN1604</b>	<b>RN2604</b>	<b>RN4604</b>
			2.2	47	2.2	47	<b>RN1605</b>	<b>RN2605</b>	<b>RN4605</b>
			4.7	47	4.7	47	<b>RN1606</b>	<b>RN2606</b>	<b>RN4606</b>
			10	47	10	47	<b>RN1607</b>	<b>RN2607</b>	<b>RN4607</b>
			22	47	22	47	<b>RN1608</b>	<b>RN2608</b>	<b>RN4608</b>
			47	22	47	22	<b>RN1609</b>	<b>RN2609</b>	<b>RN4609</b>
			4.7	—	4.7	—	<b>RN1610</b>	<b>RN2610</b>	<b>RN4610</b>
			10	—	10	—	<b>RN1611</b>	<b>RN2611</b>	<b>RN4611</b>
			22	—	22	—			<b>RN4612</b>
			47	—	47	—			
			1	10	1	10			
			2.2	10	2.2	10			
			4.7	10	4.7	10			
			10	4.7	10	4.7			
			47	10	47	10			
			2.2	47	22	47			
			47	47	2.2	47			
22	22	10	10			<b>*RN46A1</b>			

\*: New product

Note: Please ask for the nearest Toshiba distributor about the production works of bold product numbers which are listed the above.