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Jameco Part Number 657205

TRIAC(Through Hole / Isolated)

TMG8C80F

SanRex Triac **TMG8C80F** is designed for full wave AC control applications.
It can be used as an ON/OFF function or for phase control operation.

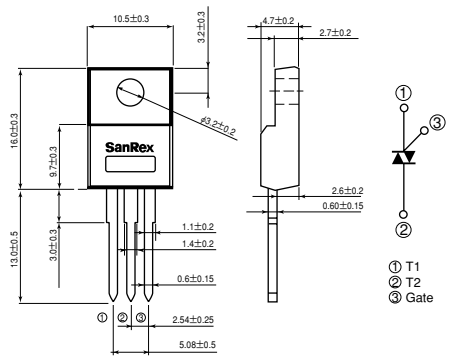
Typical Applications

- Home Appliances : Washing Machines, Vacuum Cleaners, Rice Cookers, Micro Wave Ovens, Hair Dryers, other control applications
- Industrial Use : SMPS, Copier Machines, Motor Controls, Dimmer, SSR, Heater Controls, Vending Machines, other control applications

Features

- $I_{T(RMS)}$=8A
- High Surge Current
- Low Voltage Drop
- Lead-Free Package

TO-220F



Identifying Code：T8C8F　　Unit：mm

■Maximum Ratings

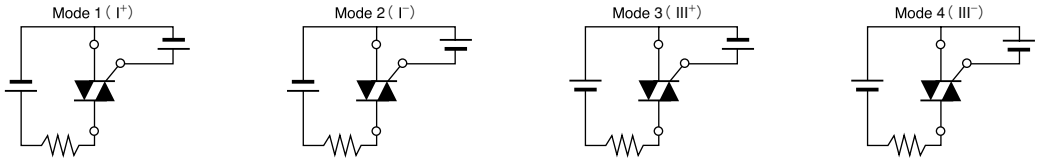
(Tj=25℃ unless otherwise specified)

Symbol	Item	Reference	Ratings	Unit
V_{DRM}	Repetitive Peak Off-State Voltage		800	V
$I_{T(RMS)}$	R.M.S. On-State Current	Tc=89℃	8	A
I_{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, Peak value non-repetitive	80/88	A
I^2t	I^2t (for fusing)		32	A^2S
P_{GM}	Peak Gate Power Dissipation		5	W
$P_{G(AV)}$	Average Gate Power Dissipation		0.5	W
I_{GM}	Peak Gate Current		2	A
V_{GM}	Peak Gate Voltage		10	V
V_{ISO}	Isolation Breakdown Voltage (R.M.S.)	A.C. 1minute	1500	V
Tj	Operating Junction Temperature		−40～+125	℃
Tstg	Storage Temperature		−40～+150	℃
	Mass		2	g

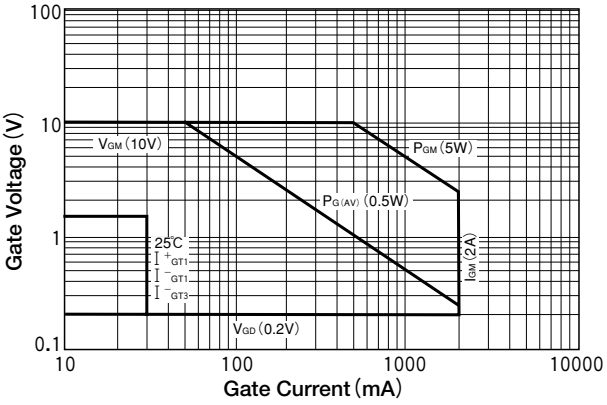
■Electrical Characteristics

Symbol		Item	Reference	Ratings			Unit
				Min.	Typ.	Max.	
I_{DRM}		Repetitive Peak Off-State Current	$V_D=V_{DRM}$, Single phase, half wave, Tj=125℃			2	mA
V_{TM}		Peak On-State Voltage	I_T=12A, Inst. measurement			1.4	V
I_{GT1}^{+}	1	Gate Trigger Current	V_D=6V, R_L=10Ω			30	mA
I_{GT1}^{-}	2					30	
I_{GT3}^{+}	3					—	
I_{GT3}^{-}	4					30	
V_{GT1}^{+}	1	Gate Trigger Voltage				1.5	V
V_{GT1}^{-}	2					1.5	
V_{GT3}^{+}	3					—	
V_{GT3}^{-}	4					1.5	
V_{GD}		Non-Trigger Gate Voltage	Tj=125℃, $V_D=\frac{1}{2}V_{DRM}$	0.2			V
[dv/dt]c		Critical Rate of Rise of Off-State Voltage at Commutation	Tj=125℃, [di/dt]c=−4A/ms, V_D=400V	10			V/μs
I_H		Holding Current			15		mA
Rth		Thermal Resistance	Junction to case			3.7	℃/W

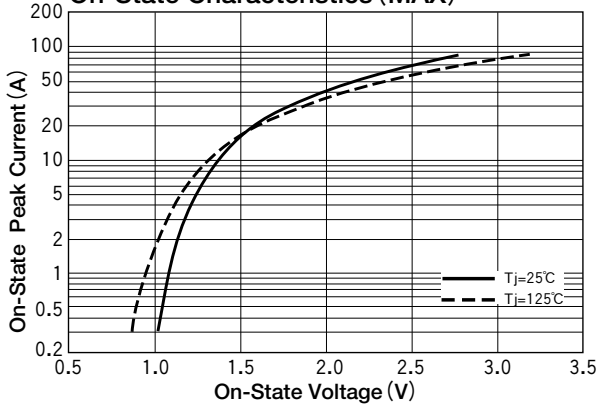
Trigger mode of the triac



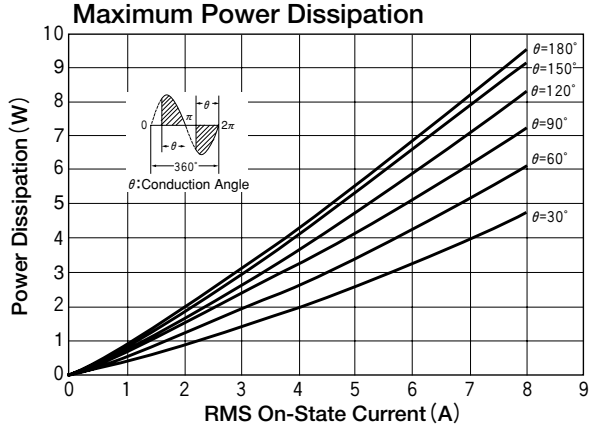
Gate Characteristics



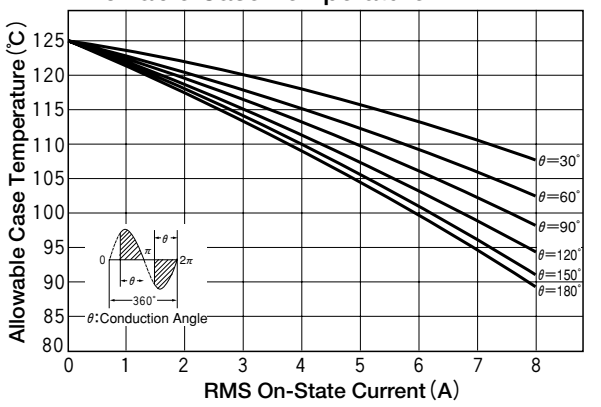
On-State Characteristics (MAX)



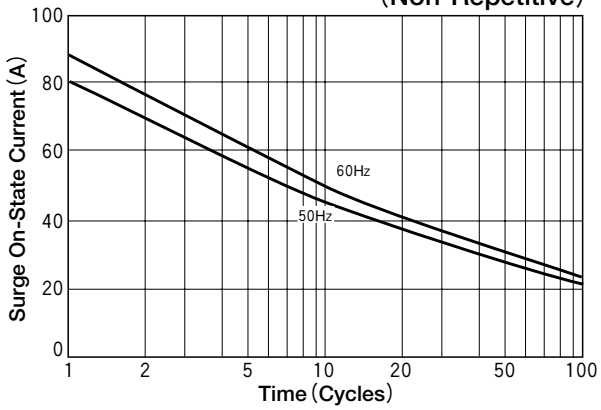
RMS On-State Current vs Maximum Power Dissipation



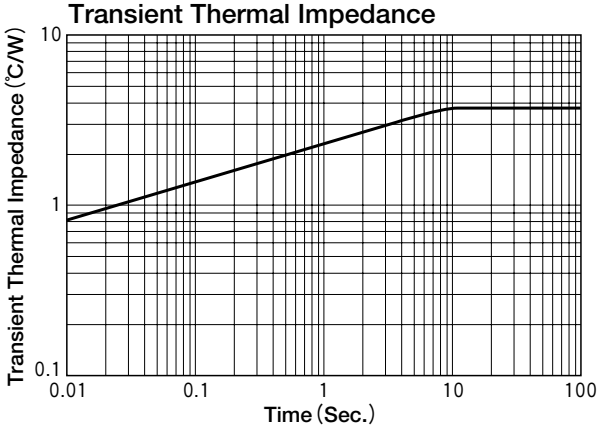
RMS On-State vs Allowable Case Temperature



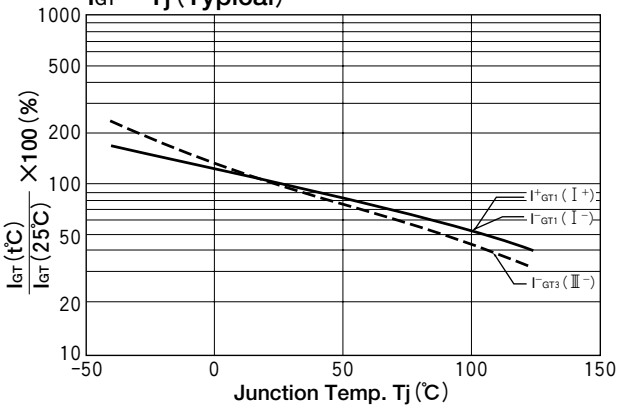
Surge On-State Current Rating (Non-Repetitive)



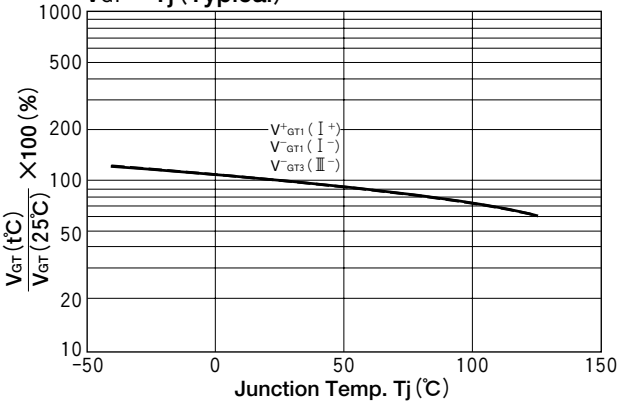
Transient Thermal Impedance



IGT — Tj (Typical)



VGT — Tj (Typical)



SanRex®

SanRex Triac Cross Reference Guide

SanRex Triac Cross Refference Guide will help you consider or determine the competitive Triac that SanRex supplies.

This guide refers to closest SanRex alternative or direct equivalent for most and major competitive products in the market. However, SanRex assumes no responsibility and does not guarantee all descriptions in this guide.

If you have any further questions or concerns, please contact us.



SanRex Corp. 50 Seaview Blvd. Port Washington NY, 11050 Web. : www.sanrex.com

Jan. 4, 2006

SanRex®

SanRex Triac Cross Reference Guide

1. Hole Through (Standard Triac)

1) TO-251 (Non-isolated package)

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
1	3A	600V	TMG3C60C	*Q6004V3	*T410-600H	*MAC4DCM
2		800V	TMG3C80C	-	*T410-800H	*MAC4DCN
3	5A	600V	TMG5C60C	*Q6004V4	*T410-600H	*MAC4DCM
4		800V	TMG5C80C	*Q8004V4	*T410-800H	*MAC4DCN

Note) With * for 4A rated device.

2) TO-220AB, TO-220AB2 (Non-isolated package)

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
5	5A	600V	TMG5C60	**Q6006R5	**BTB06-600CW	**T2500D
6		800V	TMG5C80	**Q8006R5	**BTB06-800CW	-
7	8A	600V	TMG8C60	Q6008R5	BTB08-600CW	MAC8M
8		800V	TMG8C80	Q8008R5	BTB08-800CW	MAC8N
9	10A	600V	TMG10C60	Q6010R4	BTB10-600CW	MAC210A8 (4Q)
10		800V	TMG10C80	Q8010R5	BTB10-800CW	MAC210A10 (4Q)
11	12A	600V	TMG12C60	-	BTB12-600CW	MAC12M
12		800V	TMG12C80	-	BTB12-800CW	MAC12N
13	16A	600V	TMG16C60	***Q6015R5	BTB16-600CW	MAC16CM
14		800V	TMG16C80	***Q8015R5	BTB16-800CW	MAC16CN
15	20A	600V	TMG20C60	-	-	-
16		800V	TMG20C80	-	-	-

Note) With ** for 6A and with *** for 15A. 4Q =4 Quadrant device.

3) TO-220F, TO-220F2 (Isolated package)

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
17	3A	600V	TMG3C60F	*Q6004L3	*T410-600W	-
18		800V	TMG3C80F	-	*T410-800W	-
19	5A	600V	TMG5C60F	**Q6006L5	**BTA06-600CW	-
20.2		800V	TMG5C80F	**Q8006L5	**BTA06-800CW	-
22	8A	600V	TMG8C60F	Q6008L5	BTA08-600CW	-
23		800V	TMG8C80F	Q8008L5	BTA08-800CW	-
24	10A	600V	TMG10C60F	Q6010L4	BTA10-600CW	-
25		800V	TMG10C80F	Q8010L4	BTA10-800CW	-
26	12A	600V	TMG12C60F	-	BTA12-600CW	-
27		800V	TMG12C80F	-	BTA12-800CW	-
28	16A	600V	TMG16C60F	***Q6015L5	BTA16-600CW	-
29		800V	TMG16C80F	***Q8015L5	BTA16-800CW	-
30	20A	600V	TMG20C60F	-	-	-
31		800V	TMG20C80F	-	-	-
32	25A	600V	TMG25C60F	Q6025R5	BTB24-600CW	-
33		800V	TMG25C80F	Q8025R5	BTB24-800CW	-

Note) With * for 4A, with ** for 6A and with *** for 15A.

4) TO-3P (Non-isolated package)

No.	$I_{T(RMS)}$	V_{DRM}	SanRex	Littelfuse (Teccor)	ST	On-semi
34	16A	600V	TMG16C60L	-	-	-
35		800V	TMG16C80L	-	-	-
36	25A	600V	TMG25C60L	-	-	-
37		800V	TMG25C80L	-	-	-

5) TO-3PF (Isolated package)

No.	$I_{T(RMS)}$	V_{DRM}	SanRex	Littelfuse (Teccor)	ST	On-semi
38	16A	600V	TMG16C60J	-	-	-
39		800V	TMG16C80J	-	-	-
40	25A	600V	TMG25C60J	*Q6025K6	**BTA26-600CW	-
41		800V	TMG25C80J	*Q8025K6	**BTA26-800CW	-

Note) With * for TO-218 package, with ** for TOP3 package

2. Hole Through (Sensitive Gate Triac)

1) TO-92 package

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
42	1A	600V	TMG1C60	L601E6	Z0107MA	MAC997A8
43		800V	TMG1C80	-	Z0107NA	-

2) TO-251 (Non-isolated package)

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
44	2A	600V	TMG2D60C	-	-	-
45		800V	TMG2D80C	-	-	-
46	3A	600V	TMG3D60C	*L6004V6	*T405-600H	-
47		800V	TMG3D80C	-	*T405-800H	-
48	5A	600V	TMG5D60C	**L6006V6	*T405-600H	-
49		800V	TMG5D80C	-	*T405-800H	-

Note) With * for 4A device. With ** for 6A device.

3) TO-220AB, TO-220AB2 (Non-isolated package)

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
50	5A	600V	TMG5D60	-	BTB06-600SW	-
51		800V	TMG5D80	-	BTB06-800SW	-
52	8A	600V	TMG8D60	-	BTB08-600SW	MAC228A8
53		800V	TMG8D80	-	BTB08-800SW	MAC228A10
54	10A	600V	TMG10D60	-	-	-
55		800V	TMG10D80	-	-	-
56	12A	600V	TMG12D60	-	BTB12-600SW	-
57		800V	TMG12D80	-	BTB12-800SW	-
58	16A	600V	TMG16D60	-	BTB16-600SW	-
59		800V	TMG16D80	-	BTB16-800SW	-
60	20A	600V	TMG20D60	-	-	-
61		800V	TMG20D80	-	-	-

4) TO-220F, TO-220F2 (Isolated package)

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
62	2A	600V	TMG2D60F	-	-	-
63		800V	TMG2D80F	-	-	-
64	3A	600V	TMG3D60F	*L6004L6	*T405-600W	-
65		800V	TMG3D80F	-	*T405-800W	-
66	5A	600V	TMG5D60F	**L6006L8 (4Q)	**BTA06-600SW	-
67		800V	TMG5D80F	-	**BTA06-800SW	-
68	8A	600V	TMG8D60F	L6008L8 (4Q)	BTA08-600SW	-
69		800V	TMG8D80F	-	BTA08-800SW	-
70	10A	600V	TMG10D60F	-	-	-
71		800V	TMG10D80F	-	-	-
72	12A	600V	TMG12D60F	-	BTA12-600SW	-
73		800V	TMG12D80F	-	BTA12-800SW	-
74	16A	600V	TMG16D60F	-	BTA16-600SW	-
75		800V	TMG16D80F	-	BTA16-800SW	-
76	20A	600V	TMG20D60F	-	-	-
77		800V	TMG20D80F	-	-	-
78	25A	600V	TMG25D60F	-	-	-
79		800V	TMG25D80F	-	-	-

Note) With * for 4A device. With ** for 6A device. 4Q=4 quadrant device.

5) TO-3P (Non-isolated package)

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
80	16A	600V	TMG16D60L	-	-	-
81		800V	TMG16D80L	-	-	-
82	25A	600V	TMG25D60L	-	-	-
83		800V	TMG25D80L	-	-	-

6) TO-3PF (Isolated package)

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
84	16A	600V	TMG16D60J	-	-	-
85		800V	TMG16D80J	-	-	-
86	25A	600V	TMG25D60J	-	-	-
87		800V	TMG25D80J	-	-	-

3. Hole Through (Tj=150 °C Triac)

1) TO-92 package)

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
88	1A	600V	TMG1CQ60	-	-	-

2) TO-251 (Non-isolated package)

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
89	2A	600V	TMG2CQ60C	-	-	-
90		600V	TMG2DQ60C	-	-	-
91	3A	600V	TMG3CQ60C	-	-	-
92		600V	TMG3DQ60C	-	-	-
93	5A	600V	TMG5CQ60C	-	-	-

2) TO-220AB, TO-220AB2 (Non-isolated package)

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
94	5A	600V	TMG5CQ60	-	-	-
95	8A	600V	TMG8CQ60	-	-	-
96	10A	600V	TMG10CQ60	-	-	-
97	12A	600V	TMG12CQ60	-	T1235H-600T	-
98	16A	600V	TMG16CQ60	-	-	-
99	20A	600V	TMG20CQ60	-	-	-

3) TO-220F, TO-220F2 (Isolated package)

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
100	2A	600V	TMG2CQ60F	-	-	-
101		600V	TMG2DQ60F	-	-	-
102	3A	600V	TMG3CQ60F	-	-	-
103		600V	TMG3DQ60F	-	-	-
104	5A	600V	TMG5CQ60F	-	-	-
105	8A	600V	TMG8CQ60F	-	-	-
106	10A	600V	TMG10CQ60F	-	-	-
107	12A	600V	TMG12CQ60F	-	-	-
108	16A	600V	TMG16CQ60F	-	-	-
109	20A	600V	TMG20CQ60F	-	-	-
110	25A	600V	TMG25CQ60F	-	-	-

4) TO-3P (Non-isolated package)

No.	$I_{T(RMS)}$	V_{DRM}	SanRex	Littelfuse (Teccor)	ST	On-semi
111	16A	600V	TMG16CQ60L	-	-	-
112	25A	600V	TMG25CQ60L	-	-	-

5) TO-3PF (Isolated package)

No.	$I_{T(RMS)}$	V_{DRM}	SanRex	Littelfuse (Teccor)	ST	On-semi
113	16A	600V	TMG16CQ60J	-	-	-
114	25A	600V	TMG25CQ60J	*Q6025K6	**BTA26-600CW	-

Note) With * for TO-218 package, with ** for TOP3 package

4. SMD (Standard Triac)

1) D Pak (TO-252 package)

No.	$I_{T(RMS)}$	V_{DRM}	SanRex	Littelfuse (Teccor)	ST	On-semi
115	3A	600V	TMG3C60D	*Q6004D3	*T410-600B	*MAC4DCMT
116		800V	TMG3C80D	-	*T410-800B	*MAC4DCNT
117	5A	600V	TMG5C60D	-	*T410-600B	*MAC4DCMT
118		800V	TMG5C80D	-	*T410-800B	*MAC4DCNT

Note) With * for 4A device.

2) D2 Pak (TO-263 package)

No.	$I_{T(RMS)}$	V_{DRM}	SanRex	Littelfuse (Teccor)	ST	On-semi
119	5A	600V	TMG5C60H	*Q6006N5	-	-
120		800V	TMG5C80H	*Q8006N5	-	-
121	8A	600V	TMG8C60H	Q6008N5	T835-600G	-
122		800V	TMG8C80H	Q8008N5	T835-800G	-
123	10A	600V	TMG10C60H	Q6010N5	-	-
124		800V	TMG10C80H	Q8010N5	-	-
125	12A	600V	TMG12C60H	-	T1235-600G	-
126		800V	TMG12C80H	-	T1235-800G	-
127	16A	600V	TMG16C60H	Q6015N5	T1635-600G	-
128		800V	TMG16C80H	Q8015N5	T1635-800G	-

Note) With * for 6A device.

5. SMD (Sensitive Gate Triac)

1) SOT-89 package

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
129	1A	600V	TMG1C60A	-	*Z0107MN	*MAC08MT1
130		800V	TMG1C80A	-	*Z0107MN	-

Note) With * for SOT-223 package

2) D Pak (TO-252 package)

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
131	2A	600V	TMG2D60D	-	-	-
132		800V	TMG2D80D	-	-	-
133	3A	600V	TMG3D60D	*L6004D6	*T405-600B	-
134		800V	TMG3D80D	-	*T405-800B	-
135	5A	600V	TMG5D60D	*L6006D8	*T410-600B	-
136		800V	TMG5D80D	-	*T410-600B	-

Note) With * for 4A device.

3) D2 Pak (TO-263 package)

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
137	5A	600V	TMG5D60H	-	-	-
138		800V	TMG5D80H	-	-	-
139	8A	600V	TMG8D60H	-	T810-600G	-
140		800V	TMG8D80H	-	T810-800G	-
141	10A	600V	TMG10D60H	-	-	-
142		800V	TMG10D80H	-	-	-
143	12A	600V	TMG12D60H	-	-	-
144		800V	TMG12D80H	-	-	-
145	16A	600V	TMG16D60H	-	-	-
146		800V	TMG16D80H	-	-	-

6. SMD (Tj=150 °C Triac)

1) SOT-89 package

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
147	1A	600V	TMG1CQ60A	-	-	-

Note) With * for SOT-223 package

2) D Pak (TO-252 package)

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
148	2A	600V	TMG2CQ60D	-	-	-
149		600V	TMG2DQ60D	-	-	-
150	3A	600V	TMG3CQ60D	-	-	-
151		600V	TMG3DQ60D	-	-	-
152	5A	600V	TMG5CQ60D	-	-	-

Note) With * for 4A device.

3) D2 Pak (TO-263 package)

No.	IT(RMS)	VDRM	SanRex	Littelfuse (Teccor)	ST	On-semi
153	5A	600V	TMG5CQ60H	-	-	-
154	8A	600V	TMG8CQ60H	-	-	-
155	10A	600V	TMG10CQ60H	-	-	-
156	12A	600V	TMG12CQ60H	-	T1235H-600G	-
157	16A	600V	TMG16CQ60H	-	-	-

7. Fast-on package Triac

No.	$I_{T(RMS)}$	V_{DRM}	SanRex	Littelfuse (Teccor)	ST	On-semi
158	25A	400V	TG25E/F40	-	-	-
159		600V	TG25E/F60	Q6025P5	BTA25-600CW	-
160	35A	400V	TG35E/F40	-	-	-
161		600V	TG35E/F60	Q6035P5	-	-