

SEP 27 1988

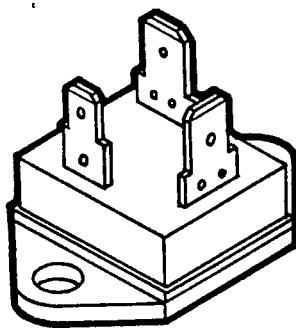
SEMJ

T-25-15  
T-25-17

# SanRex®

## POWER SEMICONDUCTORS

**NEW**



### ISOLATED TRIAC MOLD TYPE TG SERIES

- TO-3 Isolated Mounting. 2.5kV RMS Isolation
- Voltage Range Up to 600V
- High Commutating dv/dt

### TG-F SERIES

- Super High Surge Current Capability
- Economical Low On-State Voltage

**Parts Number Assignment**

**TG 25 F 40**

Type Code

C	Standard Type Gate Terminal Thickness 0.5mm (0.020in)
E	Standard Type Gate Terminal Thickness 0.8mm (0.031in)
F	High Quality Type Gate Terminal Thickness 0.8mm (0.031in)

RMS ON-STATE CURRENT

TG Series

Voltage Code	V <sub>DRM</sub> [V]
20	200
30	300
40	400
50	500
60	600



**SANSHA ELECTRIC MFG. CO., LTD.**

OSAKA JAPAN



**SanRex. POWER SEMICONDUCTORS**

T-25-17

**MAXIMUM RATINGS**

Specifications	Unit	TG16C TG16E	TG25C TG25E
$V_{DRM}$ Repetitive Peak Voltage Range	V	200~600	200~600
$I_{T(RMS)}$ RMS On-State Current	A	16 $T_c=83^\circ\text{C}$	25 $T_c=74^\circ\text{C}$
$I_{TSM}$ Surge On-State Current	A	140/160	220/250
$I^2t$ $I^2t$ for Fusing	$\text{A}^2\text{S}$	106	260
$P_{GM}$ Peak Gate Power Dissipation	W	10	10
$P_{G(AV)}$ Average Gate Dissipation	W	1	1
$I_{GM}$ Peak Gate Current	A	3	3
$V_{GM}$ Peak Gate Voltage	V	10	10
$di/dt$ Critical Rate of Current Rise	$\text{A}/\mu\text{S}$	50	50
$T_j$ Operating Junction Temperature	$^\circ\text{C}$	-40 +125	-40 +125
$T_{sig}$ Storage Temperature	$^\circ\text{C}$	-40 +125	-40 +125
$V_{ISO}$ Isolation Voltage (RMS)	V	2,500	2,500
$R_{ISO}$ Isolation Resistance	$\text{M}\Omega$	1,000	1,000
Mounting Torque	$\text{kgf}\cdot\text{cm}$	12	12
Weight	g	27	27

**ELECTRICAL CHARACTERISTICS**

$I_{DRM}$ Max. Leakage Current		mA	3	5
$V_{TM}$ Max. On-State Voltage		V	1.5	1.4
$I_{GT}$ Max. Required Gate Current	1: $I_{GT1}^+$	mA	50	50
	2: $I_{GT1}^-$	mA	50	50
	3: $I_{GT3}^+$	mA	—	—
	4: $I_{GT3}^-$	mA	50	50
$V_{GT}$ Max. Required Gate Voltage	1: $V_{GT1}^+$	V	3	3
	2: $V_{GT1}^-$	V	3	3
	3: $V_{GT3}^+$	V	—	—
	4: $V_{GT3}^-$	V	3	3
$V_{GD}$ Min. Non-Trigger Gate Voltage		V	0.2	0.2
$t_{gt}$ Max. Turn On Time		$\mu\text{S}$	10	10
$dv/dt$ Min. Critical Rate of Voltage Rise		$\text{V}/\mu\text{S}$	50	50
$[dv/dt]_c$ Min. Commutating $dv/dt$		$\text{V}/\mu\text{S}$	6	6
$I_H$ Typ. Holding Current		mA	30	30
$R_{th}$ Max. Thermal Resistance		$^\circ\text{C}/\text{W}$	2.0	1.6



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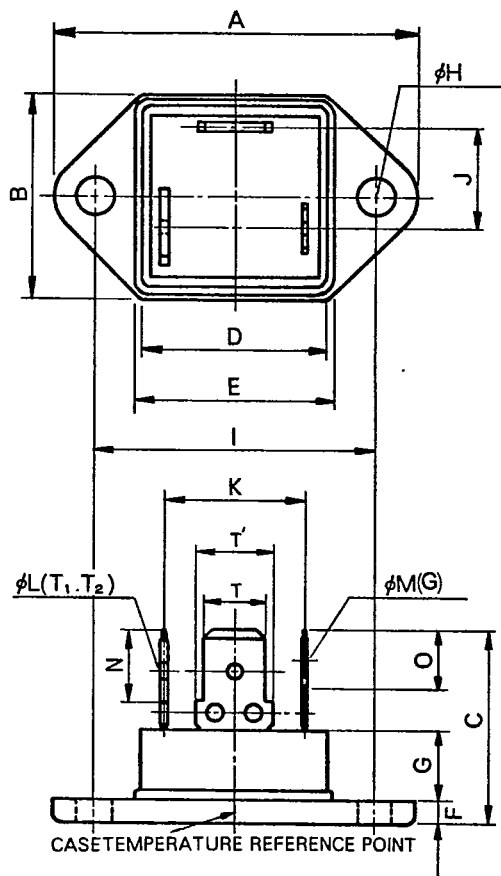
TG25F	TG35C TG35E	TG35F	Conditions
400~600	200~600	400~600	
25 Tc=80°C	35 Tc=58°C	35 Tc=67°C	Full cycle current
270/300	300/330	310/340	Non-repetitive, One cycle 50/60Hz
360	450	485	t=2 to 10 msec.
10	10	10	
1	1	1	
3	3	3	
10	10	10	
50	50	50	Tj=25°C, I <sub>G</sub> =100mA, V <sub>D</sub> =1/2V <sub>DRM</sub> , di <sub>G</sub> /dt=1A/μS
-40 +125	-40 +125	-40 +125	
-40 +125	-40 +125	-40 +125	
2,500	2,500	2,500	AC, 1 minute
1,000	1,000	1,000	DC 1,000 V, 5 sec.
12	12	12	Recommended 10 kgf·cm (9 lb·in)
27	27	27	

3	5	3	Tj=125°C, at V <sub>DRM</sub>
1.35	1.4	1.38	Tj=25°C, I <sub>T</sub> =1.4 I <sub>T(RMS)</sub>
50	50	50	Tj=25°C, I <sub>T</sub> =1A, V <sub>D</sub> =6V
50	50	50	
—	—	—	
50	50	50	Tj=25°C, I <sub>T</sub> =1A, V <sub>D</sub> =6V
2.5	3	2.5	
2.5	3	2.5	
—	—	—	
2.5	3	2.5	Tj=125°C, V <sub>D</sub> =1/2V <sub>DRM</sub>
0.2	0.2	0.2	
10	10	10	Tj=25°C, I <sub>T</sub> Rated, I <sub>G</sub> =100mA, V <sub>D</sub> =1/2V <sub>DRM</sub>
100	20	100	Tj=125°C, V <sub>D</sub> =2/3V <sub>DRM</sub> , Exponential wave
10	3	10	[di/dt] <sub>c</sub> = $\frac{8(TG16)}{15(TG25,35)}$ A/mS, V <sub>D</sub> =2/3V <sub>DRM</sub>
30	30	30	Tj=25°C
1.5	1.5	1.5	Junction to case



TG SERIES

T-25-17



T<sub>1</sub> : TAB250(T=6.35 (0.250), T'=8.25 (0.325), t=0.8 (0.031))  
 T<sub>2</sub> : TAB250(T=6.35 (0.250), T'=8.25 (0.325), t=0.8 (0.031))  
 G(Ctype) : TAB187(T=4.75 (0.187), T'=5.7 (0.224), t=0.5 (0.020))  
 G(E,Ftype) : TAB187(T=4.75 (0.187), T'=5.7 (0.224), t=0.8 (0.031))  
 mm (inch)

SYMBOL	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	—	1.543	—	39.20
B	—	0.906	—	23.00
C	—	0.886	—	22.50
D	—	0.791	—	20.10
E	—	0.850	—	21.60
F	0.091	0.114	2.30	2.90
G	—	0.323	—	8.20
phi H	0.161	0.169	4.10	4.30

SYMBOL	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
I	1.177	1.185	29.90	30.10
J	0.415	0.427	10.55	10.85
K	0.545	0.557	13.85	14.15
phi L	0.065	0.087	1.65	2.20
phi M	0.051	0.062	1.30	1.57
N	0.307	0.319	7.80	8.10
O	0.244	0.256	6.20	6.50





