Ordering number : EN1880B

SANYO No.1880B

DTM12-N

Silicon Planar Type

12A Bidirectional Thyristor

Features

- Insulation type
- Peak OFF-state voltage : 200 to 600V
- RMS ON-state current : 12A
- TO-220 package

Absolute Maximum Ratings at Ta = 25°C

			DTM 12C-N	DTM 12E-N	DTM 12G-N	unit
Repetitive Peak OFF-State Voltage	V_{DRM}		200	400	600	V
RMS ON-State Current	$I_{T(RMS)}$	Tc = 73°C, single-phase full-wave	→	→	12	A
Surge ON-State Current	I_{TSM}	Peak 1 cycle, 50Hz	→	→	100	A
Amperes Squared-Seconds	$\int i^2t \cdot dt$	1ms ≦ t ≦ 10ms	→	→	50	A^2S
Peak Gate Power Dissipation	P_{GM}	f ≧ 50Hz, duty ≦ 10%	→	→	5	W
Average Gate Power Dissipation	$P_{G(AV)}$		→	→	0.5	W
Peak Gate Current	I_{GM}	f ≧ 50Hz, duty ≦ 10%	→	→	±2	A
Peak Gate Voltage	V_{GM}	f ≧ 50Hz, duty ≦ 10%	→	→	±10	V
Junction Temperature	Tj		→	→	125	°C
Storage Temperature	Tstg		→	−40 to +125		°C
Weight			→	→	2.1	g

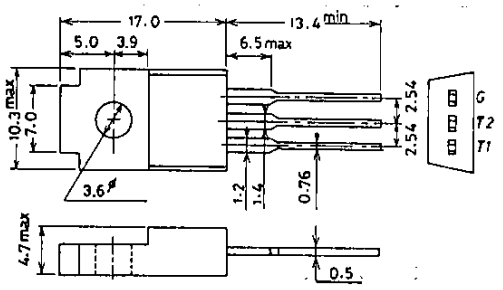
Electrical Characteristics at Ta = 25°C

			min	typ	max	unit
Repetitive Peak OFF-State Current	I_{DRM}	Tj = 125°C, $V_D = V_{DRM}$			2	mA
Peak ON-State Voltage	V_{TM}	I_{TM} = 12A			1.5	V
Critical Rate of Rise of OFF-State Voltage	(dv/dt)c	Tj = 125°C, V_D = 200V(C), 400V(E to G)	10			V/μs
Holding Current	I_H	R_L = 100Ω			50	mA
Gate Trigger Current※ (I)	I_{GT}	V_D = 12V, R_L = 20Ω			30	mA
(II)	I_{GT}	V_D = 12V, R_L = 20Ω			30	mA
(III)	I_{GT}	V_D = 12V, R_L = 20Ω			50	mA
(IV)	I_{GT}	V_D = 12V, R_L = 20Ω			30	mA
Gate Trigger Voltage※ (I)	V_{GT}	V_D = 12V, R_L = 20Ω			2	V
(II)	V_{GT}	V_D = 12V, R_L = 20Ω			2	V
(III)	V_{GT}	V_D = 12V, R_L = 20Ω			2	V
(IV)	V_{GT}	V_D = 12V, R_L = 20Ω			2	V
Gate Nontrigger Voltage	V_{GD}	Tc = 125°C, $V_D = V_{DRM}$	0.2			V
Thermal Resistance	Rth(j-c)	Between junction and case, AC			3.0	°C/W

※ : The gate trigger mode is shown below.

Trigger mode	T2	T1	G
I	+	−	+
II	+	−	−
III	−	+	+
IV	−	+	−

Package Dimensions 1144
(unit: mm)



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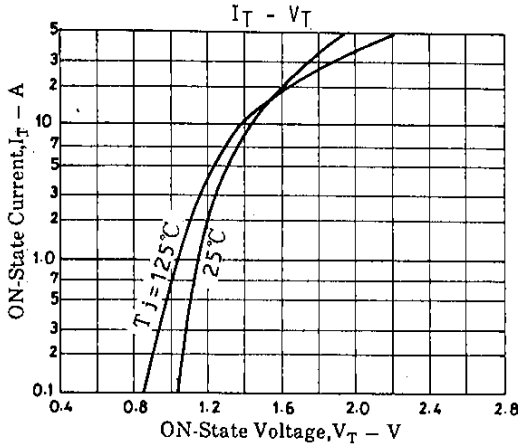
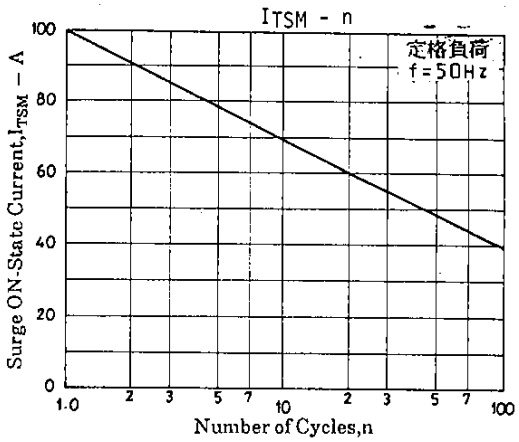
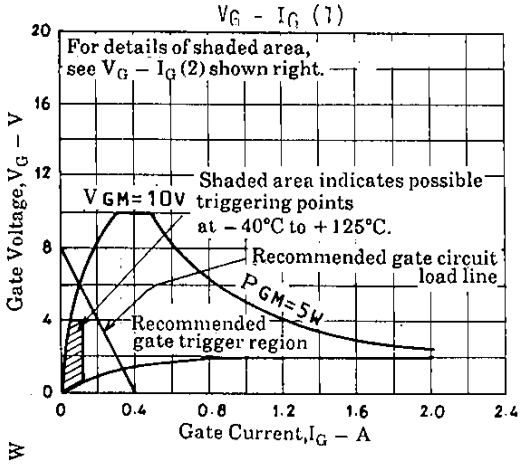
$I_T - V_T$



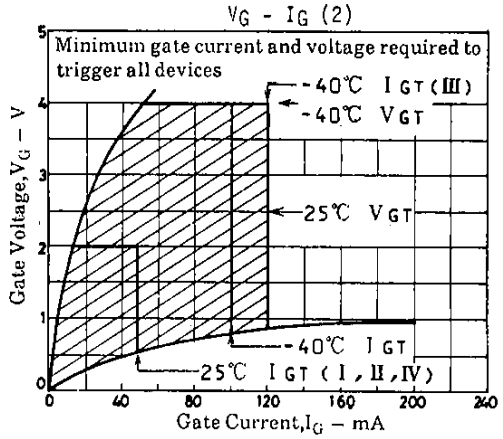
$I_{TSM} - n$



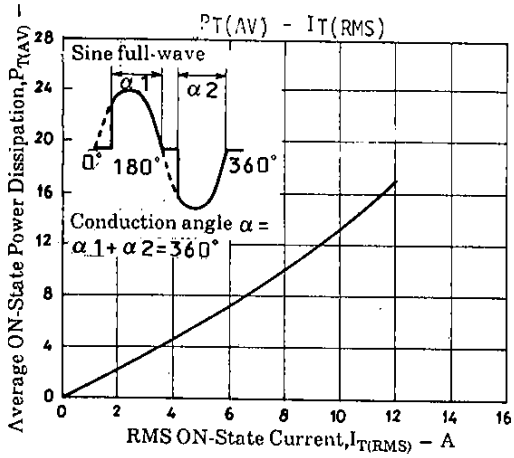
$V_G - I_G$ (1)



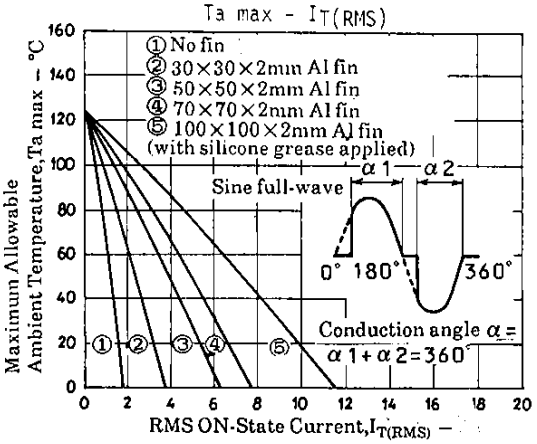
$V_G - I_G$ (2)



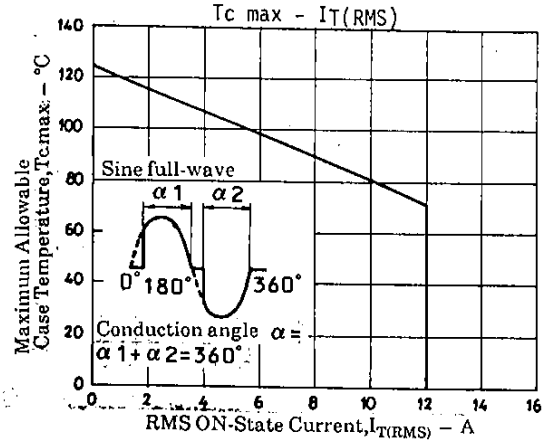
$P_{T(AV)} - I_{T(RMS)}$



T_a max – $I_{T(RMS)}$



T_c max – $I_{T(RMS)}$



I_{GT} – Tc