



12A Bidirectional Thyristor

Features

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

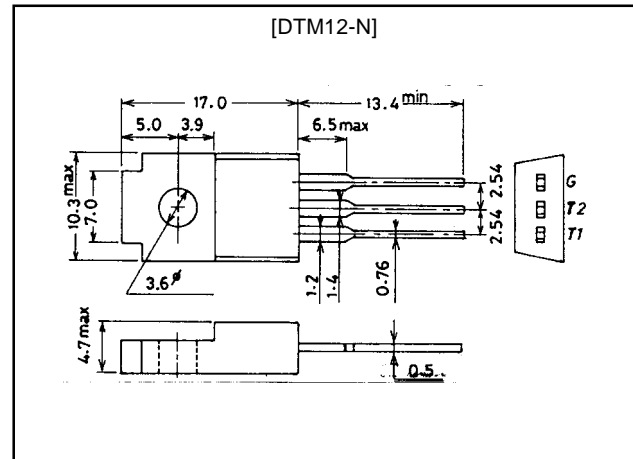
* : The gate trigger mode is shown below.

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

Package Dimensions

unit:mm

1144



Specifications

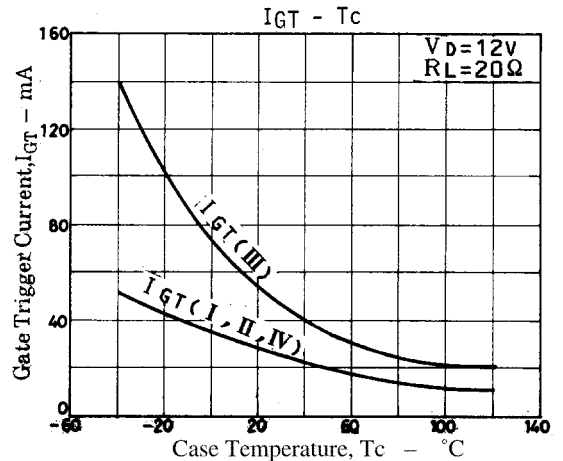
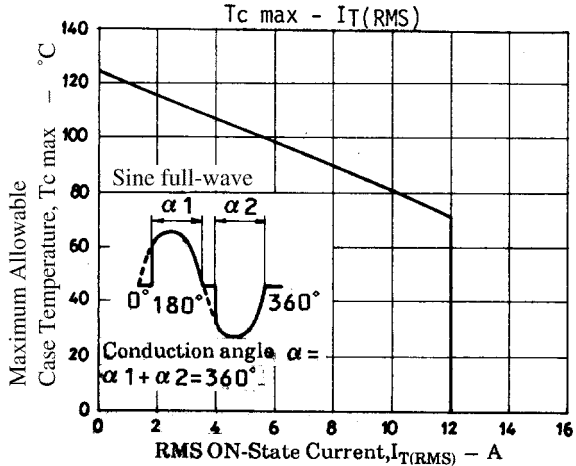
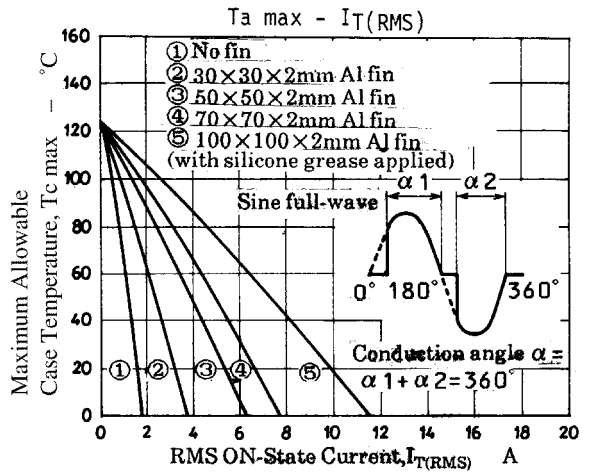
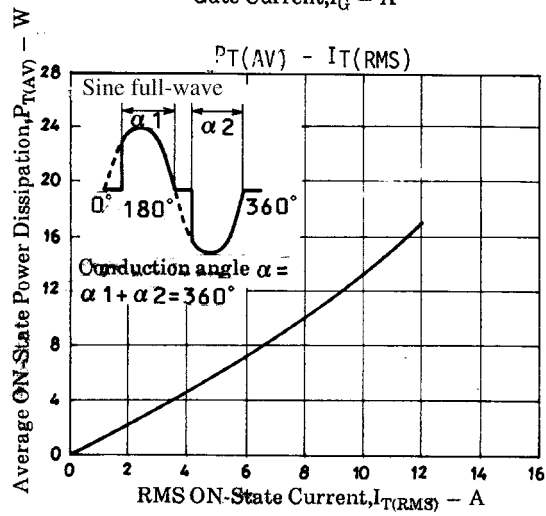
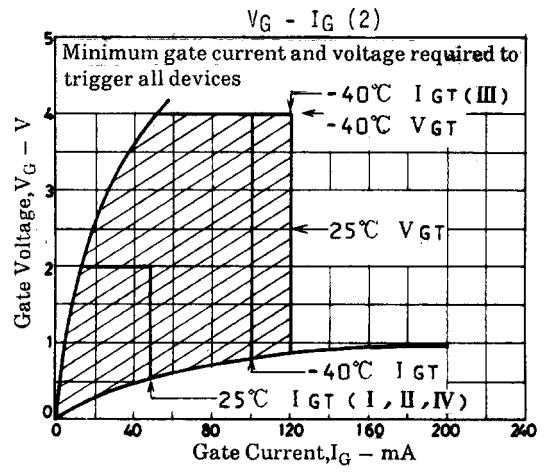
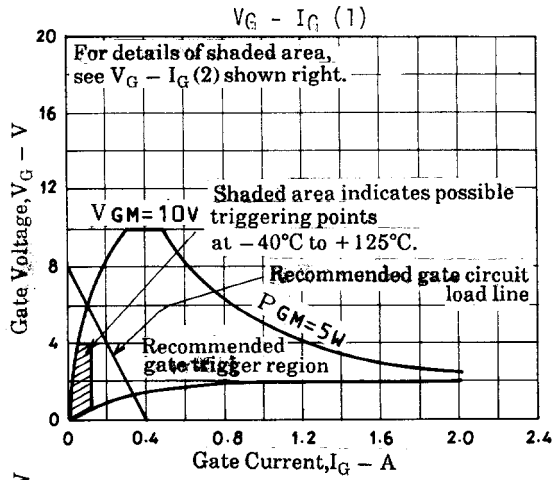
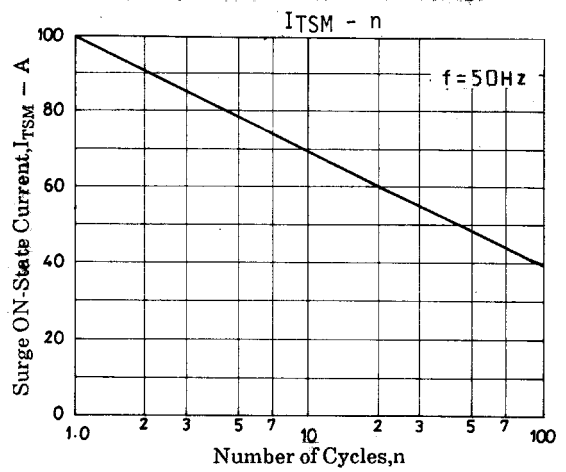
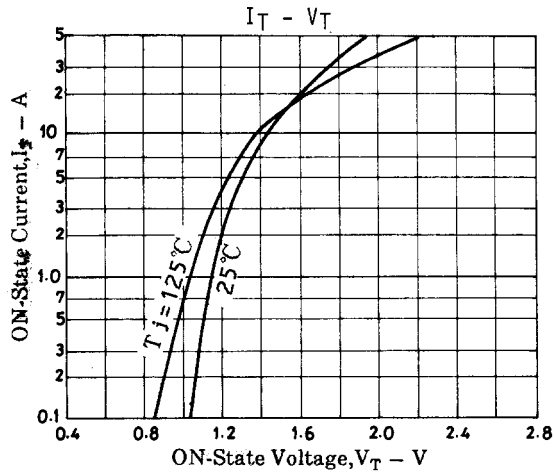
Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	DTM12C-N	DTM12E-N	DTM12G-N	Unit
Repetitive Peak OFF-State Voltage	V_{DRM}		200	400	600	V
RMS ON-State Current	$I_T(RMS)$	$T_c=73^\circ\text{C}$, single-phase full-wave	→	→	12	A
Surge ON-State Current	I_{TSM}	Peak 1 cycle, 50Hz	→	→	100	A
Amperes Squared-Seconds	$\int i^2 T dt$	$1\text{ms} \leq t \leq 10\text{ms}$	→	→	50	A ² S
Peak Gate Power Dissipation	P_{GM}	$f \geq 50\text{Hz}$, duty $\leq 10\%$	→	→	5	W
Average Gate Power Dissipation	$P_{G(AV)}$		→	→	0.5	W
Peak Gate Current	I_{GM}	$f \geq 50\text{Hz}$, duty $\leq 10\%$	→	→	± 2	A
Peak Gate Voltage	V_{GM}	$f \geq 50\text{Hz}$, duty $\leq 10\%$	→	→	± 10	V
Junction Temperature	T_J		→	→	125	°C
Storage Temperature	T_{stg}		→	→	-40 to +125	°C
Weight			→	→	2.1	g

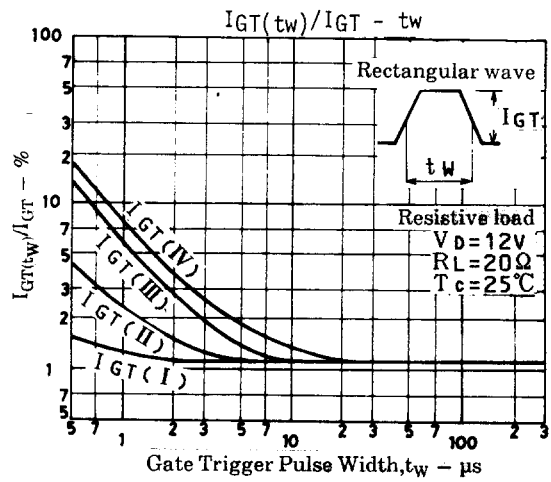
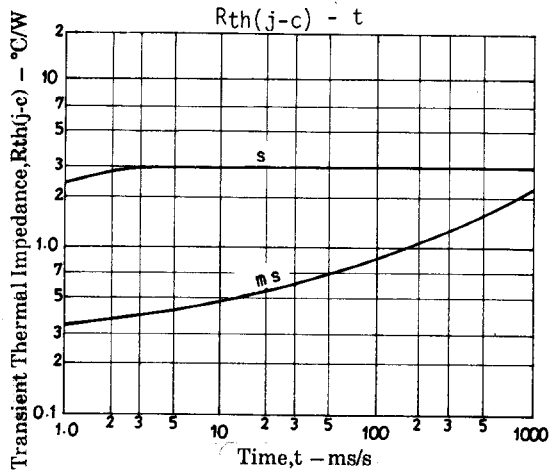
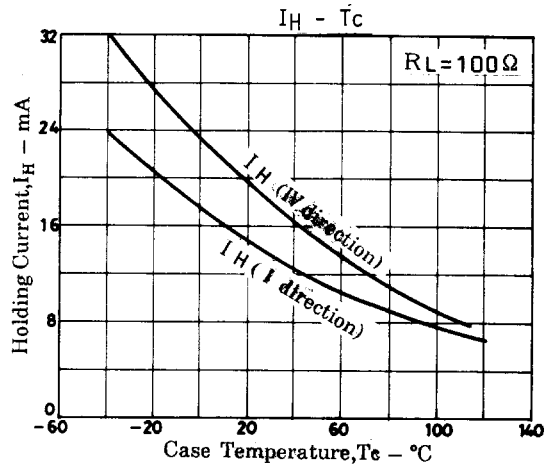
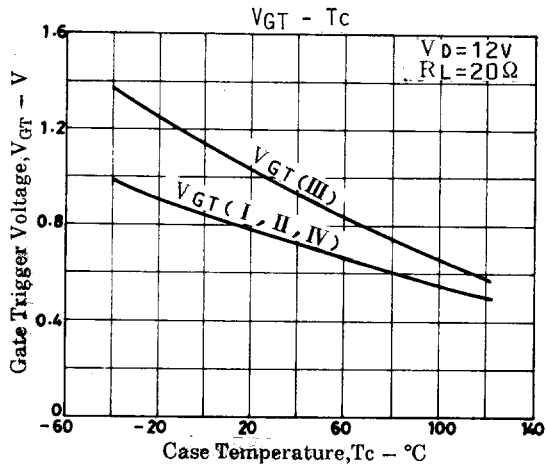
Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Repetitive Peak OFF-State Current	I_{DRM}	$T_J=125^\circ\text{C}$, $V_D=V_{DRM}$			2	mA
Peak ON-State Voltage	V_{TM}	$I_T=12\text{A}$			1.5	V
Critical Rate of Rise of OFF-State Voltage	$(dv/dt)_C$	$T_J=125^\circ\text{C}$, $V_D=200\text{V}$ (C), 400V (E to G)	10			V/ μs
Holding Current	I_H	$R_L=100\Omega$			50	mA
Gate Trigger Current* (I)	I_{GT}	$V_D=12\text{V}$, $R_L=20\Omega$			30	mA
Gate Trigger Current (II)	I_{GT}	$V_D=12\text{V}$, $R_L=20\Omega$			30	mA
Gate Trigger Current (III)	I_{GT}	$V_D=12\text{V}$, $R_L=20\Omega$			50	mA
Gate Trigger Current (IV)	I_{GT}	$V_D=12\text{V}$, $R_L=20\Omega$			30	mA
Gate Trigger Voltage* (I)	V_{GT}	$V_D=12\text{V}$, $R_L=20\Omega$			2	V
Gate Trigger Voltage (II)	V_{GT}	$V_D=12\text{V}$, $R_L=20\Omega$			2	V
Gate Trigger Voltage (III)	V_{GT}	$V_D=12\text{V}$, $R_L=20\Omega$			2	V
Gate Trigger Voltage (IV)	V_{GT}	$V_D=12\text{V}$, $R_L=20\Omega$			2	V
Gate Nontrigger Voltage	V_{GD}	$T_c=125^\circ\text{C}$, $V_D=V_{DRM}$	0.2			V
Thermal Resistance	$R_{th(j-c)}$	Between junction and case, AC			3.0	°C/W

DTM12-N



DTM12-N



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