

SANYO**DTN12**

Silicon Diffused Junction Type

12A Bidirectional Thyristor**Features**

- AC power control.
- Peak OFF-state voltage : 400, 600V.
- RMS ON-state current : 12A.

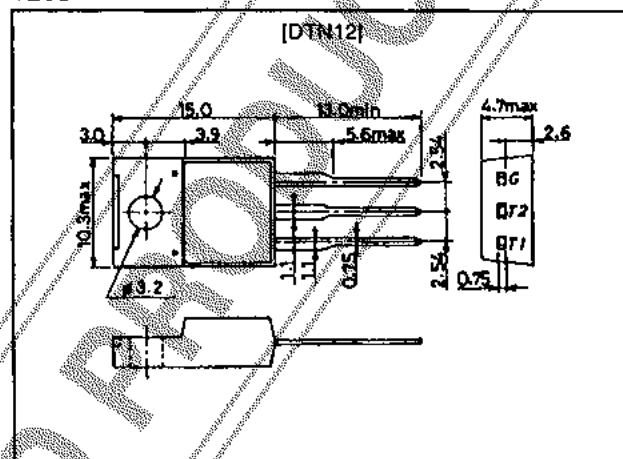
* : The gate trigger modes are shown below.

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

Package Dimensions

unit:mm

1263

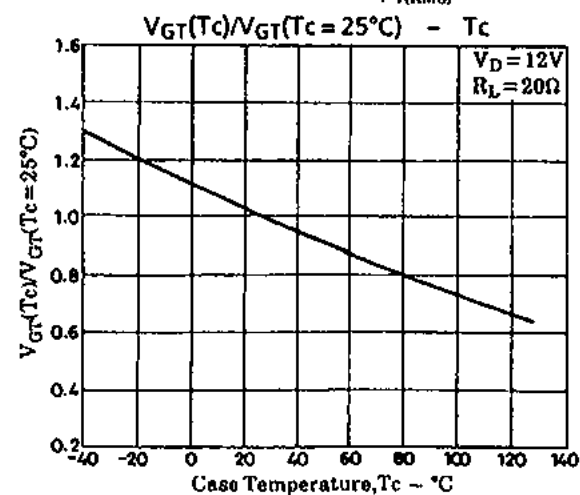
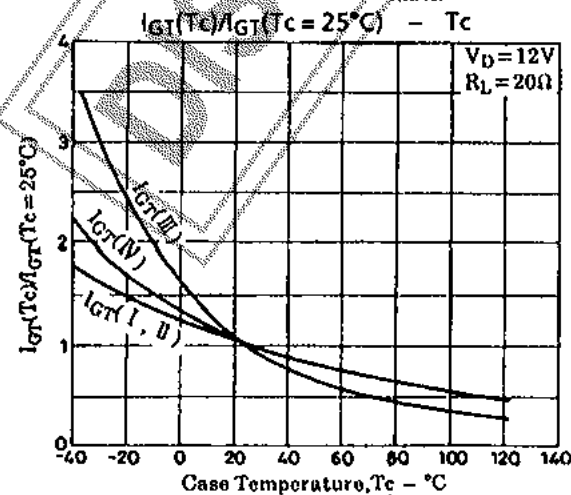
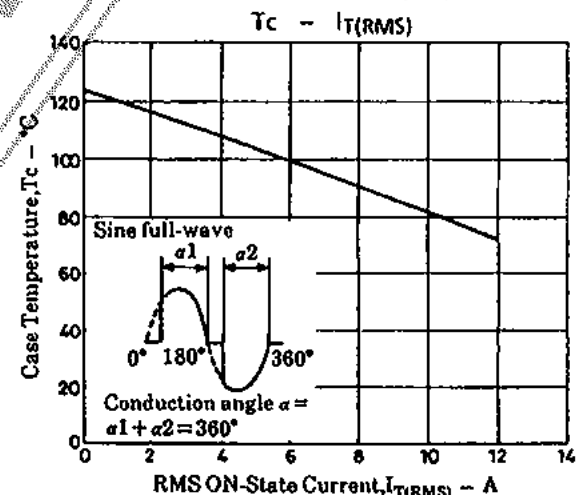
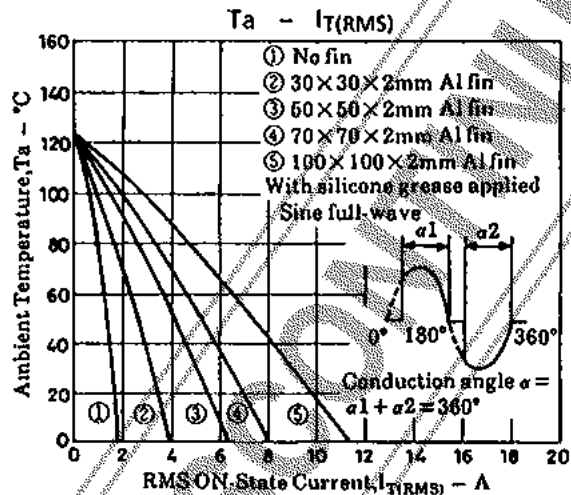
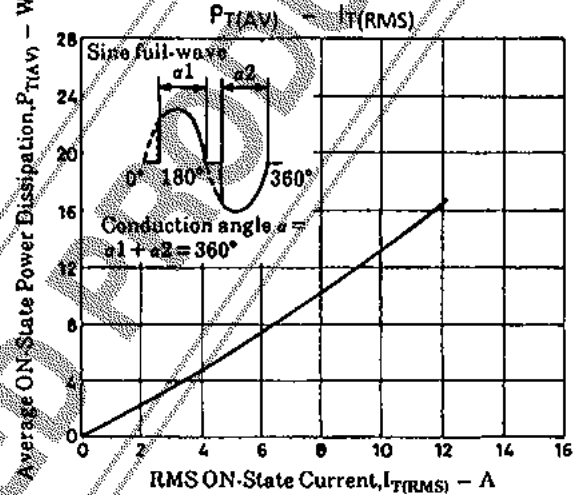
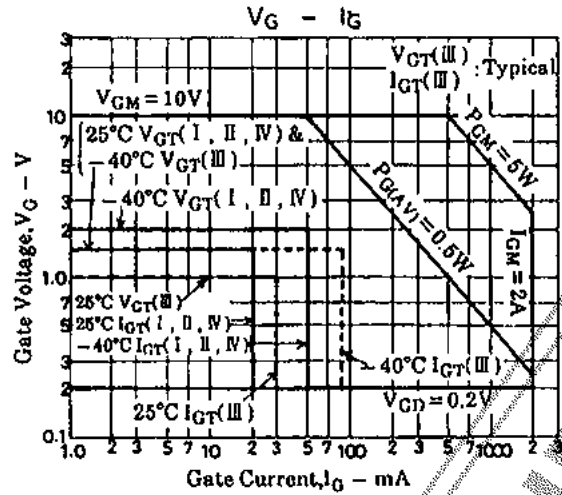
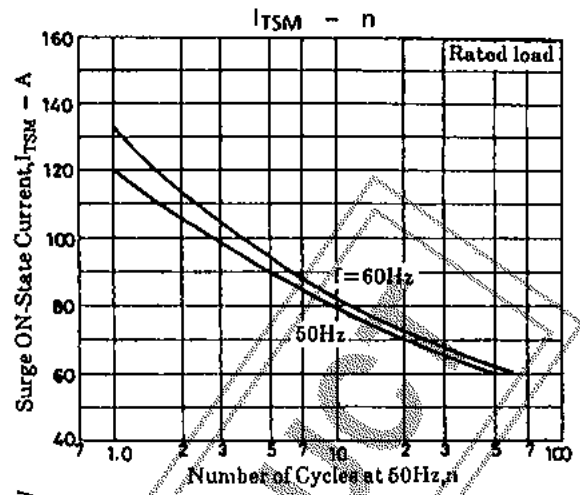
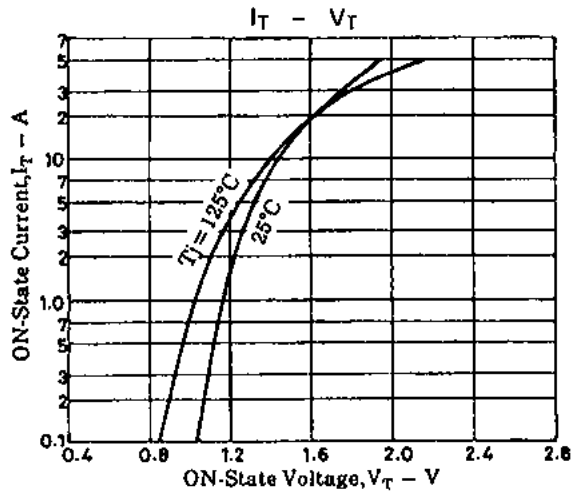
**Specifications**Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

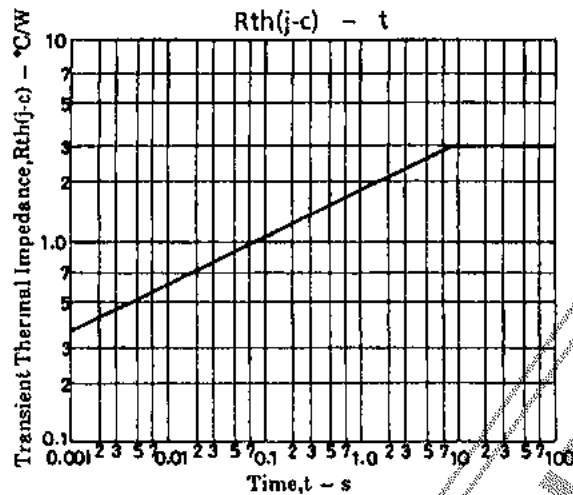
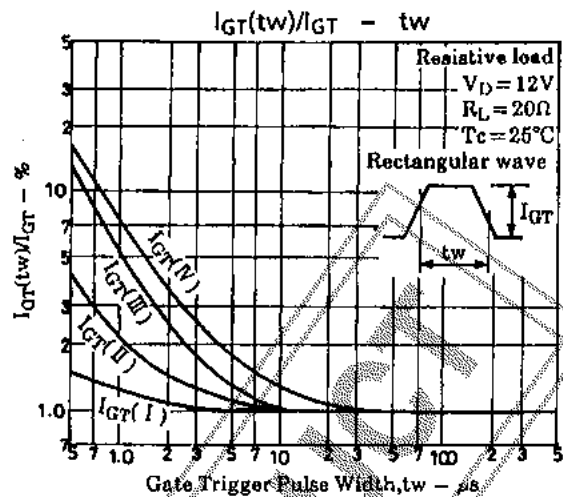
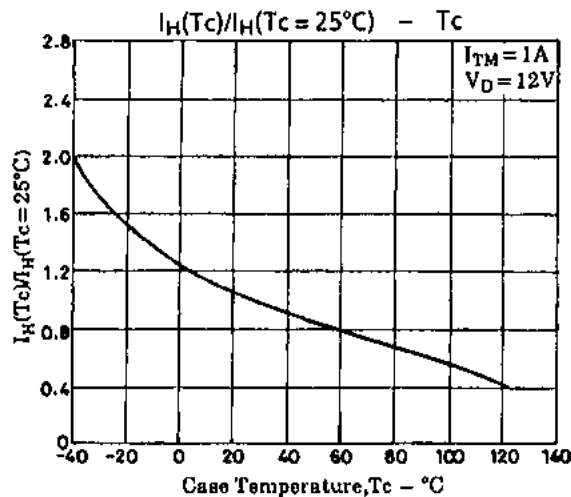
Parameter	Symbol	Conditions	DTM12E	DTM12G	Unit
Repetitive Peak OFF-State Voltage	V_{DRM}		400	600	V
RMS ON-State Current	$I_T(\text{RMS})$	Single-phase full-wave, $T_c=72^\circ\text{C}$	→	12	A
Surge ON-State Current	I_{TSM}	Peak 1 cycle, 50Hz	→	120	A
Ampere Squared-Seconds	I^2T-dt	1ms to 10ms	→	72	A ² S
Critical Rate of Rise of ON-State Current	di_T/dt		→	50	A/ μ s
Peak Gate Power Dissipation	P_{GM}		→	5	W
Average Gate Power Dissipation	$P_{G(AV)}$		→	0.5	W
Peak Gate Forward Current	I_{GM}		→	±2	A
Peak Gate Forward Voltage	V_{GM}		→	±10	V
Junction Temperature	T_j		→	125	$^\circ\text{C}$
Storage Temperature	T_{stg}		→	-40 to +125	$^\circ\text{C}$
Weight			→	1.7	g

Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Repetitive Peak OFF-State Current	I_{ORM}	$V_D = V_{DRM}$			20	μA
Peak ON-State Voltage	V_{TM}	$I_{TM} = 17\text{A}$			1.5	V
Critical Rate of Rise of Commutating OFF-State Voltage	$(dv/dt)_C$	$V_D = 400\text{V}$, $T_j = 125^\circ\text{C}$	4			V/ μ s
Holding Current	I_H	$I_{TM} = 1\text{A}$, $V_D = 12\text{V}$			50	mA
Gate Trigger Current* (I)	I_{GT}	$V_D = 12\text{V}$, $R_L = 20\Omega$			20	mA
Gate Trigger Current* (II)	I_{GT}	$V_D = 12\text{V}$, $R_L = 20\Omega$			20	mA
Gate Trigger Current* (III)	I_{GT}	$V_D = 12\text{V}$, $R_L = 20\Omega$		30		mA
Gate Trigger Current* (IV)	I_{GT}	$V_D = 12\text{V}$, $R_L = 20\Omega$			20	mA
Gate Trigger Voltage* (I)	V_{GT}	$V_D = 12\text{V}$, $R_L = 20\Omega$			1.5	V
Gate Trigger Voltage* (II)	V_{GT}	$V_D = 12\text{V}$, $R_L = 20\Omega$			1.5	V
Gate Trigger Voltage* (III)	V_{GT}	$V_D = 12\text{V}$, $R_L = 20\Omega$		1.0		V
Gate Trigger Voltage* (IV)	V_{GT}	$V_D = 12\text{V}$, $R_L = 20\Omega$			1.5	V
Gate Nontrigger Voltage	V_{GD}	$T_c = 125^\circ\text{C}$, $V_D = V_{DRM}$	0.2			V
Thermal Resistance	$R_{th(j-c)}$	AC			3.0	$^\circ\text{C/W}$

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