

**DTC10-N**

Silicon Planar Type

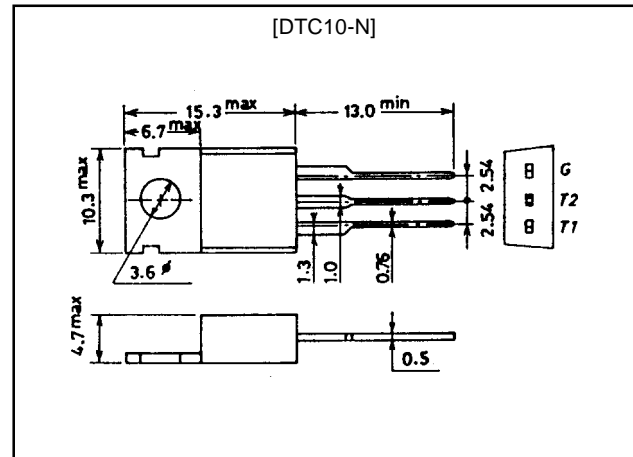
**10A Bidirectional Thyristor****Features**

- Peak OFF-state voltage : 200 to 600V.
- RMS ON-state current : 10A.
- TO-220 package.

**Package Dimensions**

unit:mm

1155

**Specifications****Absolute Maximum Ratings at Ta = 25°C**

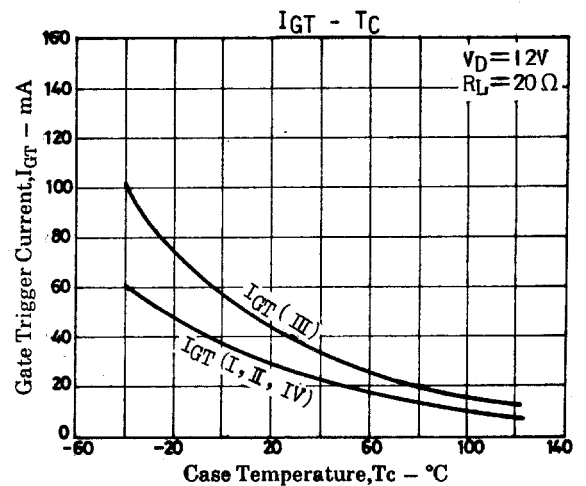
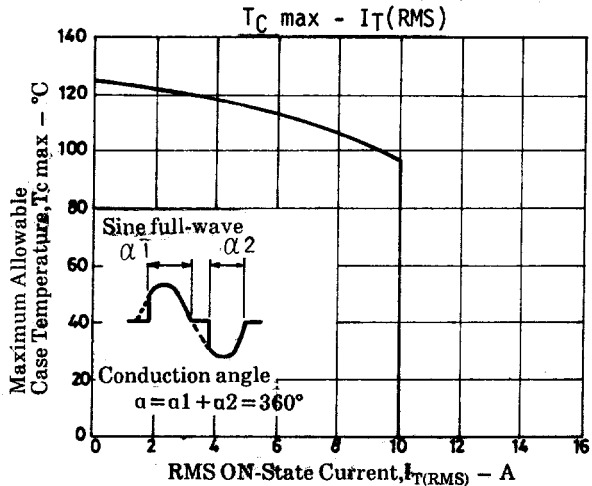
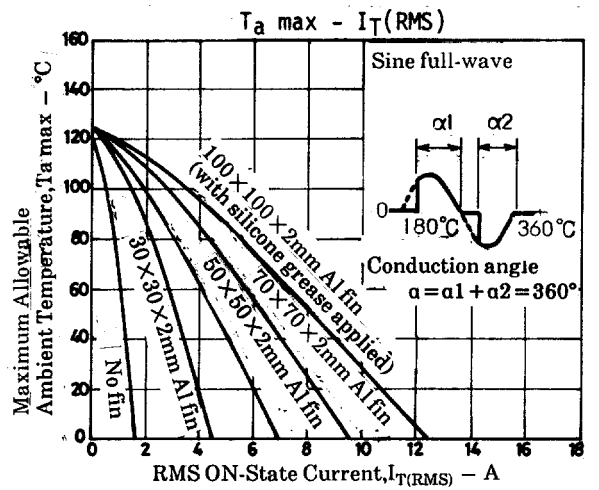
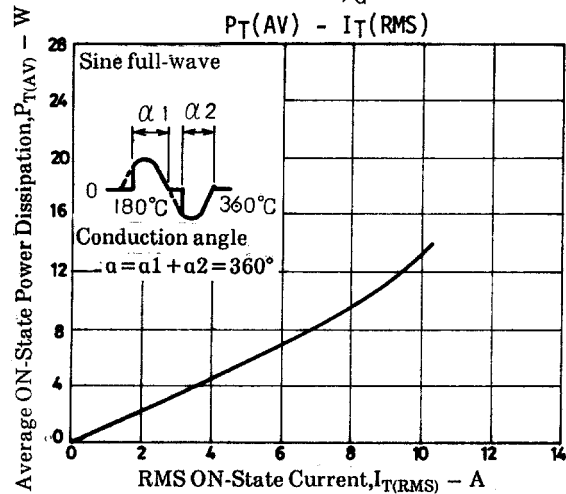
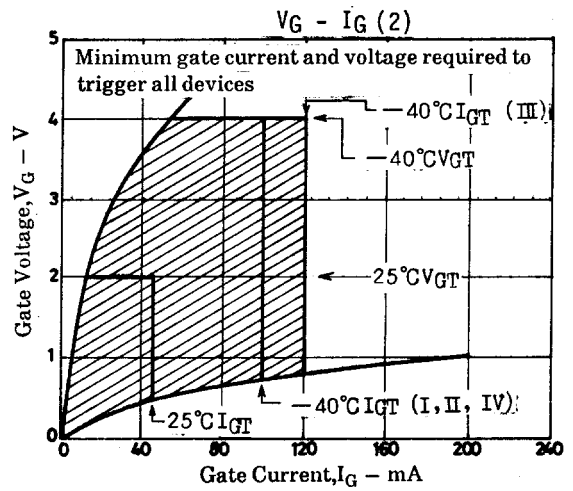
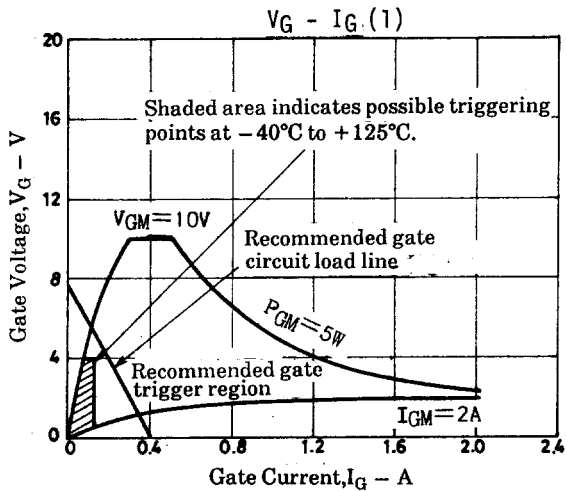
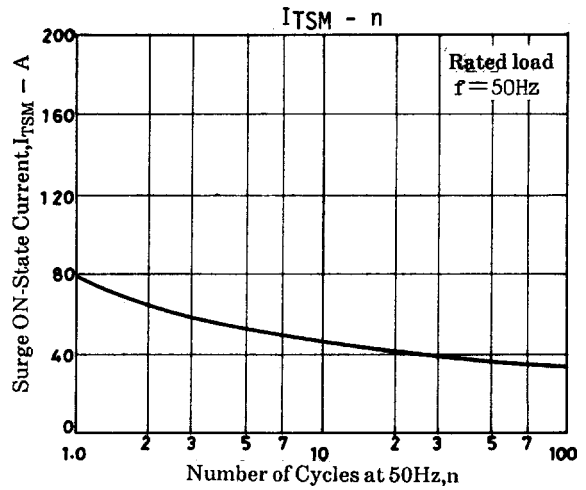
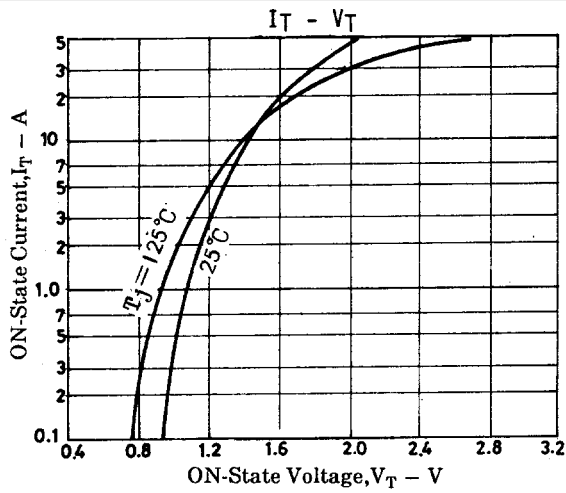
Parameter	Symbol	Conditions	DTC10C-N	DTC10E-N	DTC10G-N	Unit
Repetitive Peak OFF-State Voltage	$V_{DRM}$		200	400	600	V
RMS ON-State Current	$I_T(RMS)$	$T_c=98^\circ\text{C}$ , single-phase full-wave	→	→	10	A
Surge ON-State Current	$I_{TSM}$	Peak 1 cycle, 50Hz	→	→	80	A
Amperes Squared-Seconds	$\int i^2 T \cdot dt$	$1\text{ms} \leq t \leq 10\text{ms}$	→	→	32	A <sup>2</sup> s
Peak Gate Power Dissipation	$P_{GM}$	$f \geq 50\text{Hz}$ , $\text{duty} \leq 10\%$	→	→	5	W
Average Gate Power Dissipation	$P_{G(AV)}$		→	→	0.5	W
Peak Gate Current	$I_{GM}$	$f \geq 50\text{Hz}$ , $\text{duty} \leq 10\%$	→	→	$\pm 2$	A
Peak Gate Voltage	$V_{GM}$	$f \geq 50\text{Hz}$ , $\text{duty} \leq 10\%$	→	→	$\pm 10$	V
Junction Temperature	$T_j$		→	→	125	°C
Storage Temperature	$T_{stg}$		→	→	-40 to +125	°C
Weight			→	→	1.8	g

**Electrical Characteristics at Ta = 25°C**

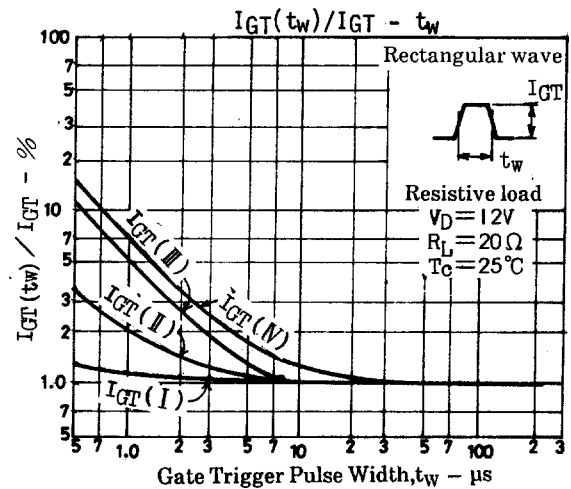
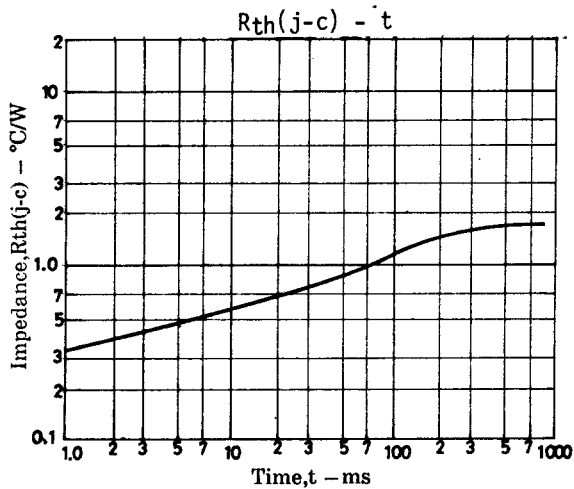
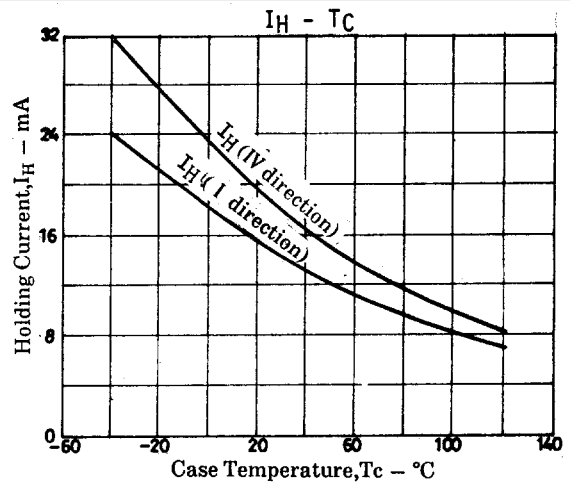
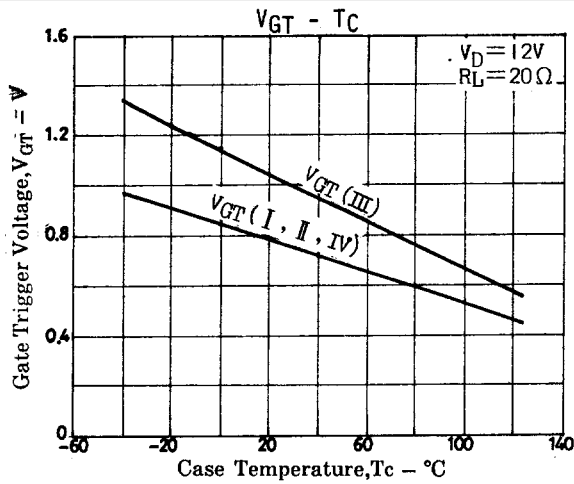
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Repetitive Peak OFF-State Current	$I_{DRM}$	$T_j=125^\circ\text{C}$ , $V_D=V_{DRM}$			2	mA
Peak ON-State Voltage	$V_{TM}$	$I_{TM}=14\text{A}$			1.5	V
Critical Rate of Rise of OFF-State Voltage	$(dv/dt)_C$	$T_j=125^\circ\text{C}$ , $V_D=200\text{V}$ (C), 400V (E, G)	10			V/ $\mu\text{s}$
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			1.8	°C/W

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