

**SANYO****DTC8-N****8A Bidirectional Thyristor****Features**

- Peak OFF-state voltage : 200 to 600V
- RMS ON-state current : 8A
- TO-220 package.

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

|                                   |                       | DTC8C-N                                          | DTC8E-N | DTC8G-N | unit                         |
|-----------------------------------|-----------------------|--------------------------------------------------|---------|---------|------------------------------|
| Repetitive Peak OFF-State Voltage | $V_{\text{DRM}}$      | 200                                              | 400     | 600     | V                            |
| RMS ON-State Current              | $I_{\text{T(RMS)}}$   | $T_c=105^\circ\text{C}$ , single-phase full-wave |         |         | 8 A                          |
| Surge ON-State Current            | $I_{\text{TSM}}$      | Peak 1 cycle, 50Hz                               |         |         | 80 A                         |
| Ampere Squared-Seconds            | $\int i^2 T \cdot dt$ | $I_{\text{ms}} \leq 10\text{ms}$                 |         |         | 32 A's                       |
| Peak Gate Power Dissipation       | $P_{\text{GM}}$       | $f \geq 50\text{Hz}$ , duty $\leq 10\%$          |         |         | 5 W                          |
| Average Gate Power Dissipation    | $P_{\text{G(AV)}}$    |                                                  |         |         | 0.5 W                        |
| Peak Gate Current                 | $I_{\text{GM}}$       | $f \geq 50\text{Hz}$ , duty $\leq 10\%$          |         |         | $\pm 2$ A                    |
| Peak Gate Voltage                 | $V_{\text{GM}}$       | $f \geq 50\text{Hz}$ , duty $\leq 10\%$          |         |         | $\pm 10$ V                   |
| Junction Temperature              | $T_j$                 |                                                  |         |         | 125 $^\circ\text{C}$         |
| Storage Temperature               | $T_{\text{stg}}$      |                                                  |         |         | -40 to +125 $^\circ\text{C}$ |
| Weight                            |                       |                                                  |         |         | 1.8 g                        |

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

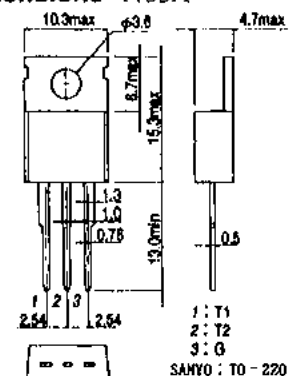
|                                            |                      |                                                                    | min | typ | max | unit               |
|--------------------------------------------|----------------------|--------------------------------------------------------------------|-----|-----|-----|--------------------|
| Repetitive Peak OFF-State Current          | $I_{\text{DRM}}$     | $T_j=125^\circ\text{C}$ , $V_D=V_{\text{DRM}}$                     |     |     | 2   | mA                 |
| Peak ON-State Voltage                      | $V_{\text{TM}}$      | $I_{\text{TM}}=12\text{A}$                                         |     |     | 1.5 | V                  |
| Critical Rate of Rise of OFF-State Voltage | $dv/dt$              | $T_j=125^\circ\text{C}$ , $V_D=200\text{V (C)}$ ,<br>400V (E to G) | 10  |     |     | V/ $\mu\text{s}$   |
| Holding Current                            | $I_{\text{HL}}$      | $R_L=100\Omega$                                                    |     |     | 50  | mA                 |
| Gate Trigger Current* (I)                  | $I_{\text{GT}}$      | $V_D=12\text{V}$ , $R_L=20\Omega$                                  |     |     | 30  | mA                 |
| (II)                                       | $I_{\text{GT}}$      | $V_D=12\text{V}$ , $R_L=20\Omega$                                  |     |     | 30  | mA                 |
| (III)                                      | $I_{\text{GT}}$      | $V_D=12\text{V}$ , $R_L=20\Omega$                                  |     |     | 50  | mA                 |
| (IV)                                       | $I_{\text{GT}}$      | $V_D=12\text{V}$ , $R_L=20\Omega$                                  |     |     | 30  | mA                 |
| Gate Trigger Voltage* (I)                  | $V_{\text{GT}}$      | $V_D=12\text{V}$ , $R_L=20\Omega$                                  |     |     | 2   | V                  |
| (II)                                       | $V_{\text{GT}}$      | $V_D=12\text{V}$ , $R_L=20\Omega$                                  |     |     | 2   | V                  |
| (III)                                      | $V_{\text{GT}}$      | $V_D=12\text{V}$ , $R_L=20\Omega$                                  |     |     | 2   | V                  |
| (IV)                                       | $V_{\text{GT}}$      | $V_D=12\text{V}$ , $R_L=20\Omega$                                  |     |     | 2   | V                  |
| Gate Nontrigger Voltage                    | $V_{\text{GD}}$      | $T_c=125^\circ\text{C}$ , $V_D=V_{\text{DRM}}$                     | 0.2 |     |     | V                  |
| Thermal Resistance                         | $R_{\text{th(j-c)}}$ | Between junction and case, AC                                      |     |     | 2   | $^\circ\text{C/W}$ |

\* : The gate trigger mode is shown below.

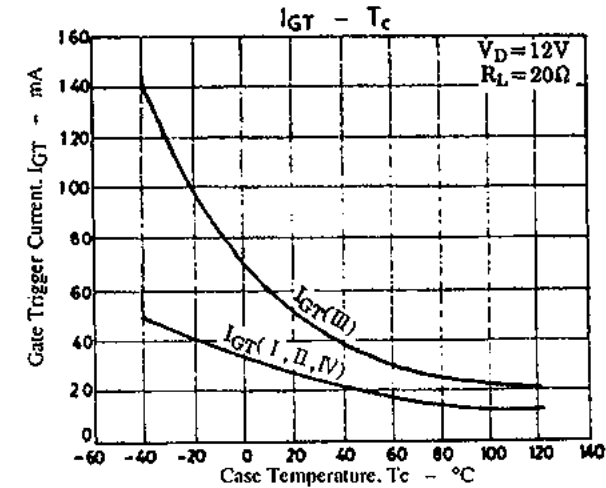
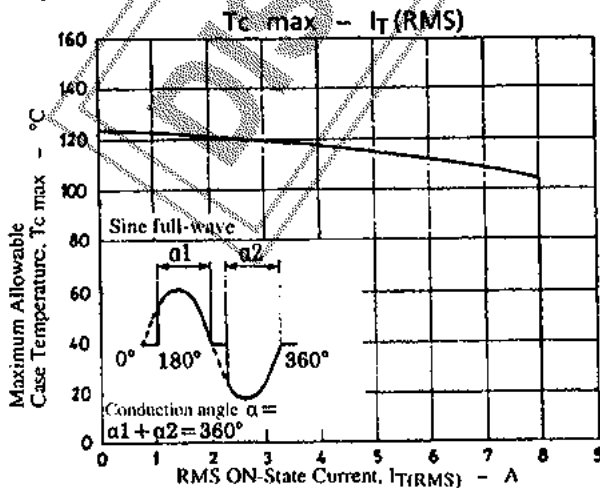
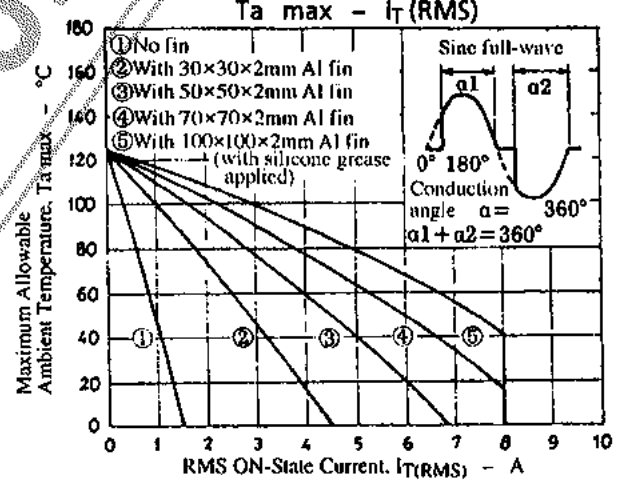
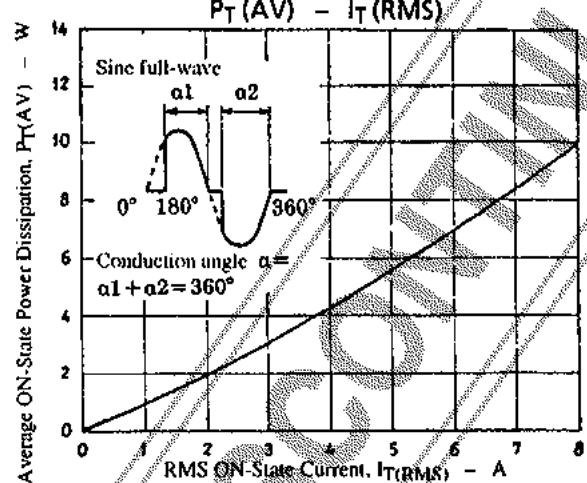
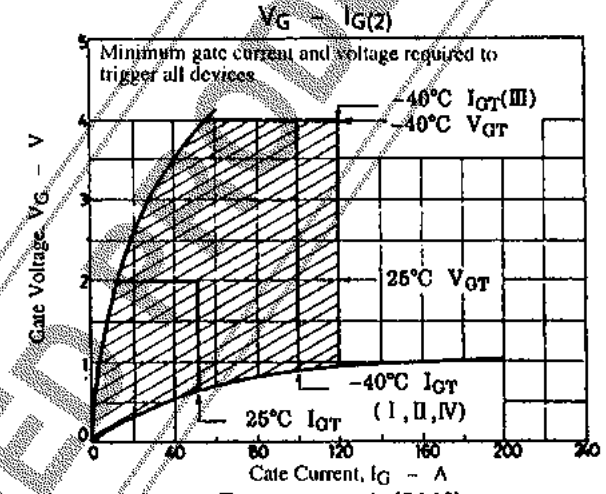
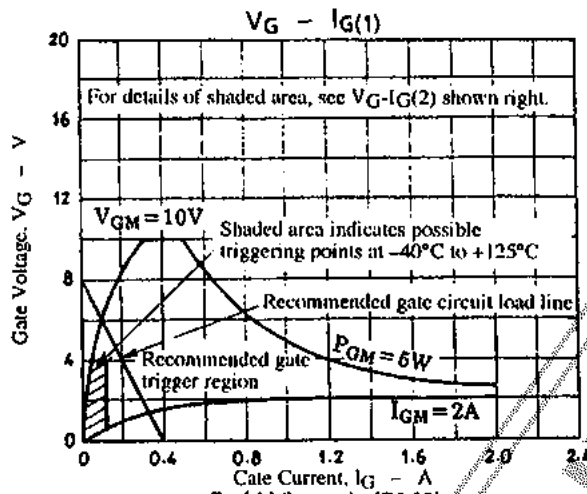
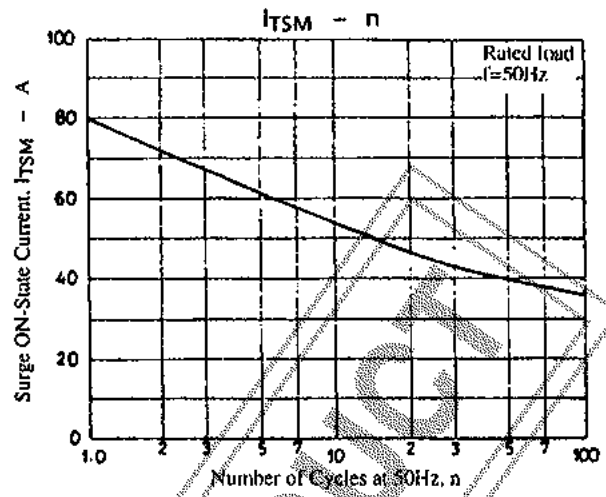
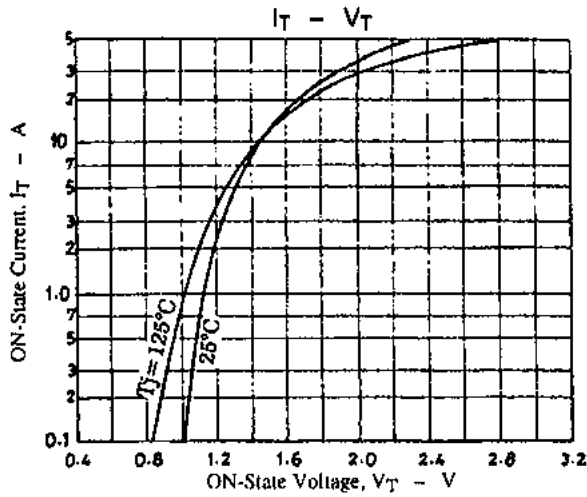
| Trigger mode | T2 | T1 | G |
|--------------|----|----|---|
| I            | +  | -  | + |
| II           | +  | -  | - |
| III          | -  | +  | + |
| IV           | -  | +  | - |

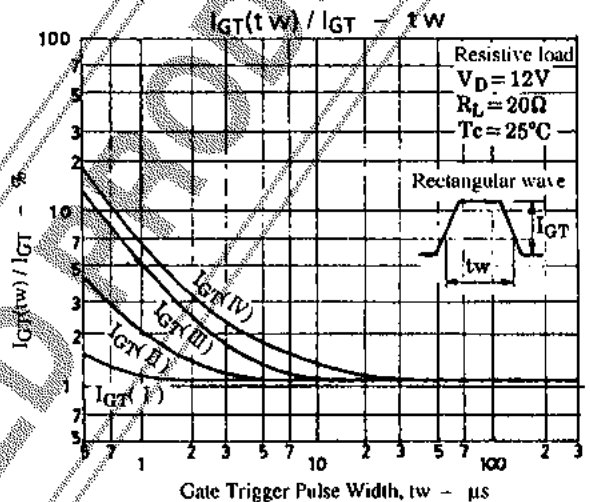
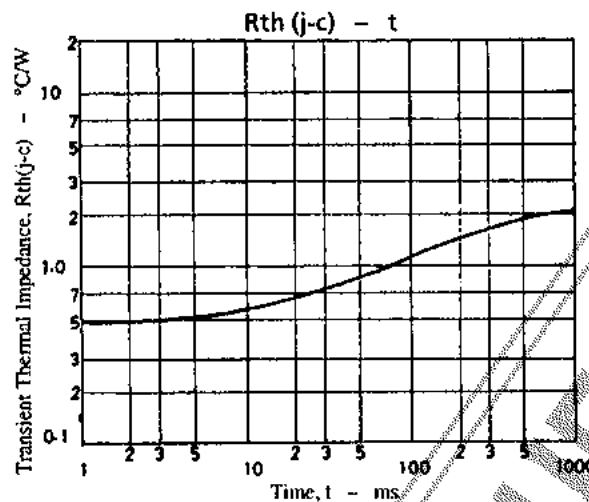
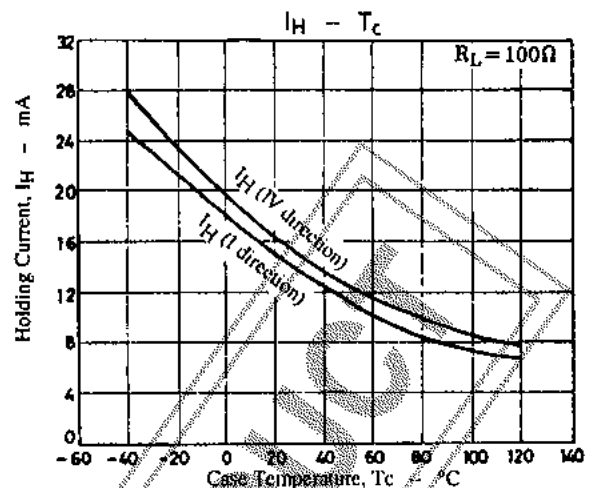
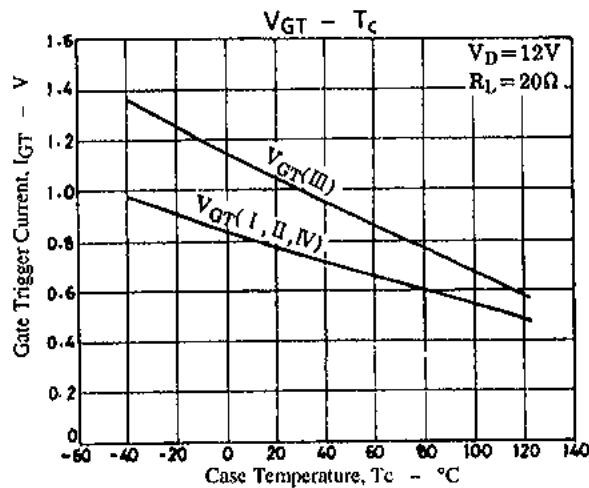
**Package Dimensions** 1155A

(unit : mm)

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