

Thyristors (Fast Switching) DCR444

Technical Data

Typical applications : High power inverters & choppers, Railway traction , UPS, Induction heating, AC motor drives & Cycloconvertors.

Type No.	V_{RRM} (Volts)	V_{RSM} (Volts)
DCR444/04	400	500
DCR444/08	800	900
DCR444/10	1000	1100
DCR444/12	1200	1300

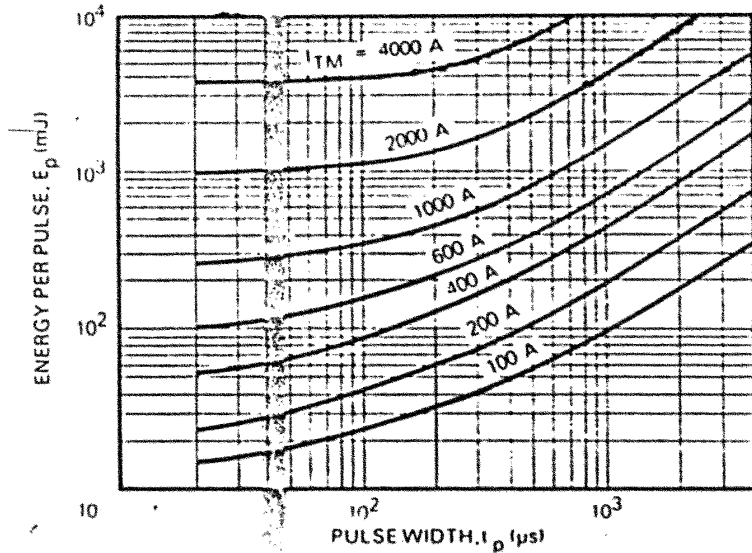
Features

- Double side cooling.
- Voltage grade upto 1200V.
- High surge capability.
- Weight 50gm (Approx.)

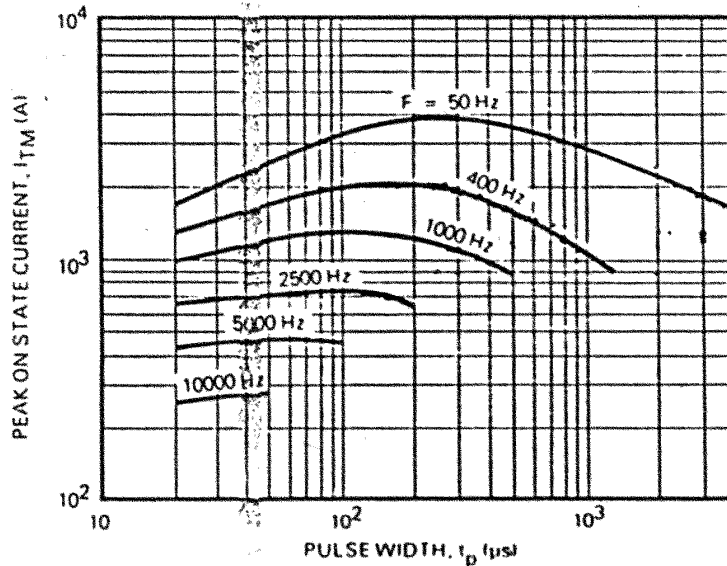
Symbol	Conditions	Values
$I_{T(AV)}$	Half wave resistive load $T_c = 80^\circ\text{C}$	280 A
I_{TSM}	$T_{vj} = 125^\circ\text{C}$; 10 ms half sine, $V_R = 0$	5000 A.
I^2T	$T_{vj} = 125^\circ\text{C}$; 10 ms half sine, $V_R = 0$	125000 A ² s
I_{GT}	$T_{vj} = 25^\circ\text{C}$; $V_{DRM} = 5\text{V}$	200 mA
V_{GT}	$T_{vj} = 25^\circ\text{C}$; $V_{DRM} = 5\text{V}$	3.0 V
dv/dt	$T_{vj} = 125^\circ\text{C}$; Voltage = 67% V_{DRM}	*200 V/ μs
$[di/dt]_{cr}$	Repetitive 50 Hz	500 A/ μs
	Non-repetitive	800 A/ μs
t_q	$T_{vj} = 25^\circ\text{C}$; $I_T = 200\text{A}$; $V_R = 50\text{V}$ $dv/dt = 200\text{V}/\mu\text{s}$ $di/dt = 30\text{A}/\mu\text{s}$	7-40 μs
V_T	$T_{vj} = 25^\circ\text{C}$; $I_T = 600\text{A}$	2.0 V max
I_{RRM}/I_{DRM}	$T_{vj} = 125^\circ\text{C}$	25 mA
I_H	$T_{vj} = 125^\circ\text{C}$; typical value	70 mA
I_L		200 mA
$R_{th(i-h)}$	dc	0.07 $^\circ\text{C}/\text{W}$
$R_{th(c-h)}$		0.02 $^\circ\text{C}/\text{W}$
T_{vj}		+125 $^\circ\text{C}$
T_{stg}		-40.....+ 125 $^\circ\text{C}$
Mounting Force		5 KN
Case outline		T

* Higher dv/dt selection available.

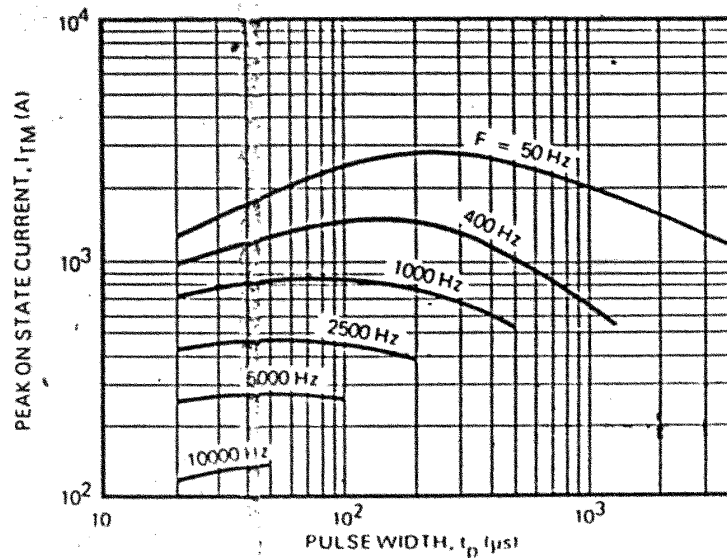




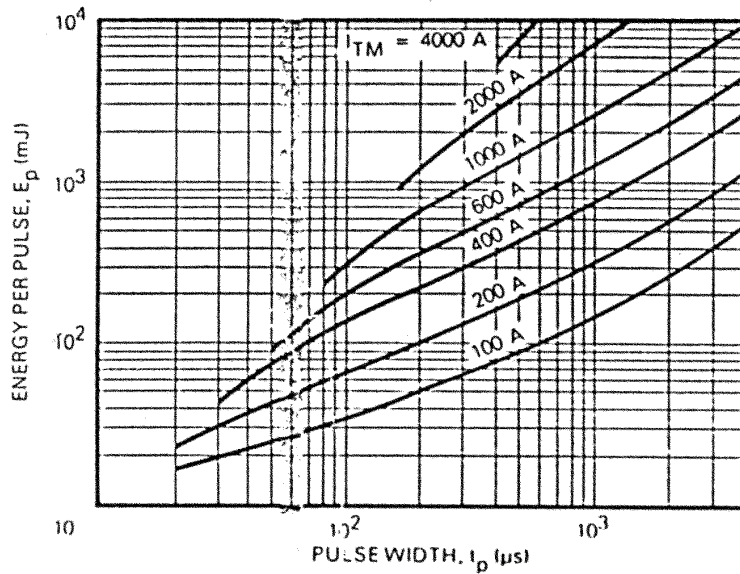
ENERGY PER PULSE FOR SINUSOIDAL PULSES.



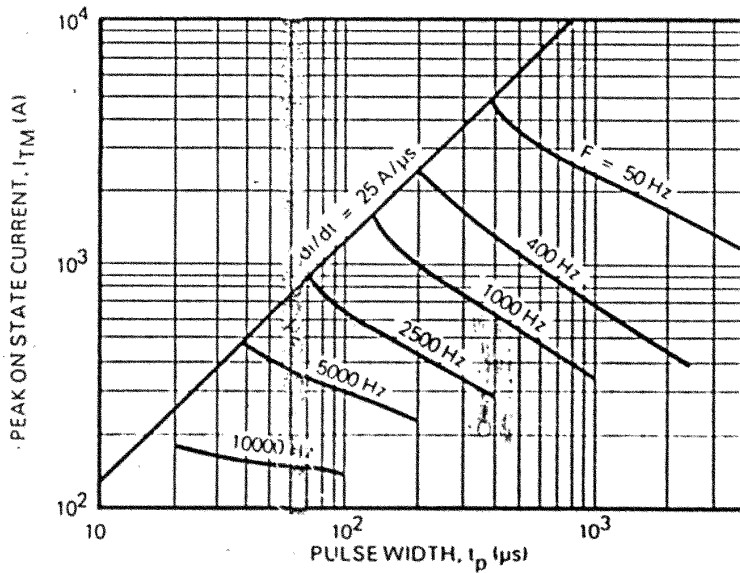
MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT VERSUS PULSE WIDTH FOR $T_C = 65^\circ\text{C}$.



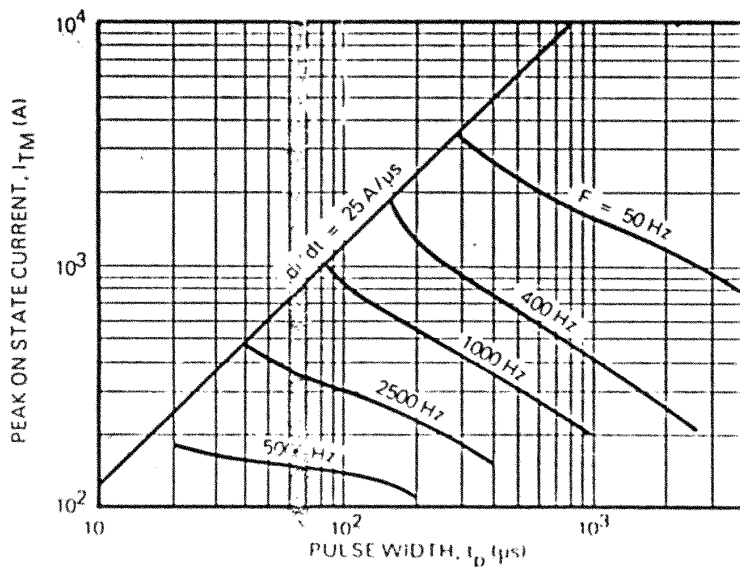
MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT VERSUS PULSE WIDTH FOR $T_C = 90^\circ\text{C}$.



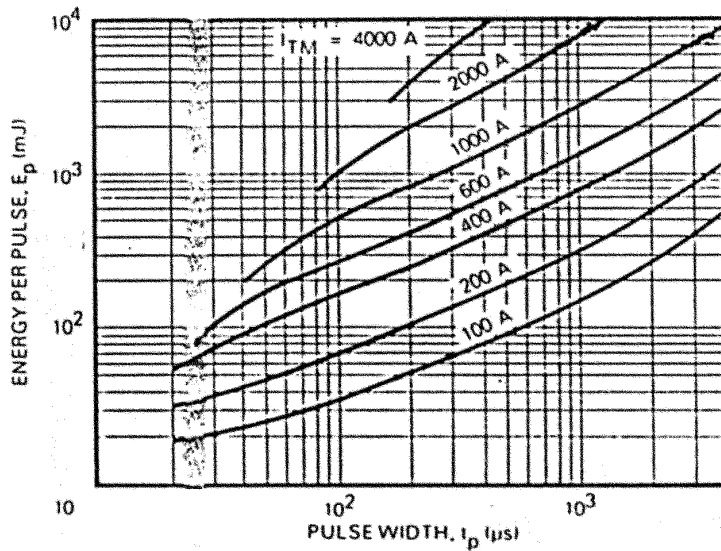
ENERGY PER PULSE FOR TRAPEZOIDAL PULSES.



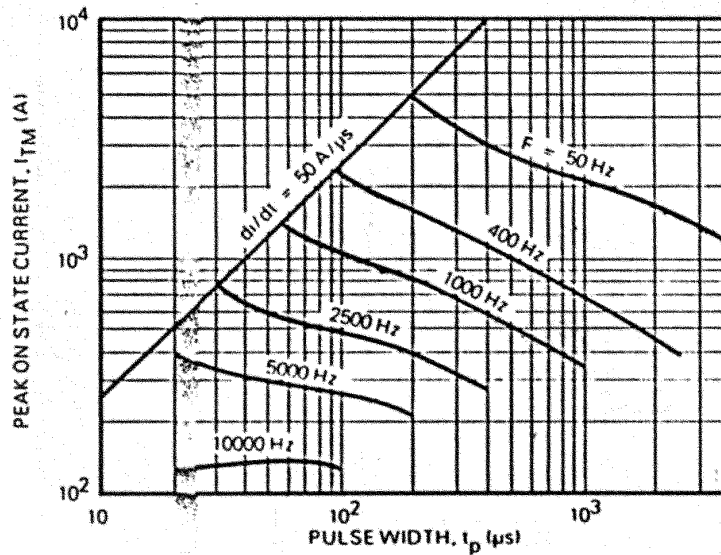
MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT VERSUS PULSE WIDTH FOR $T_C = 65^\circ\text{C}$.



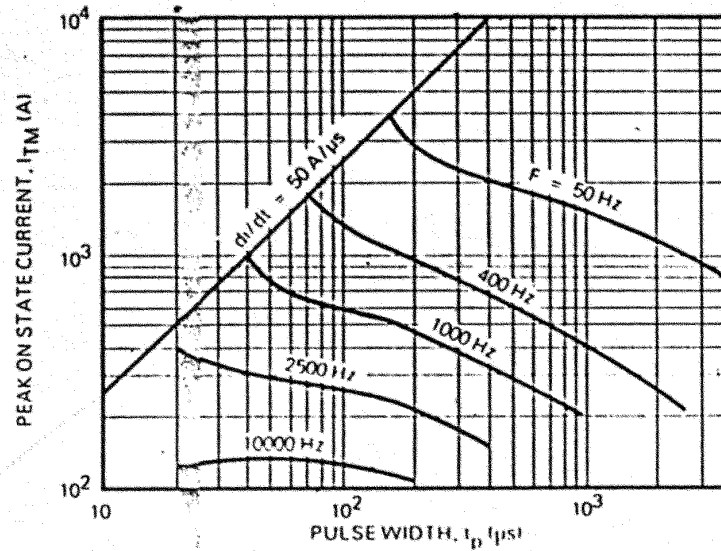
MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT VERSUS



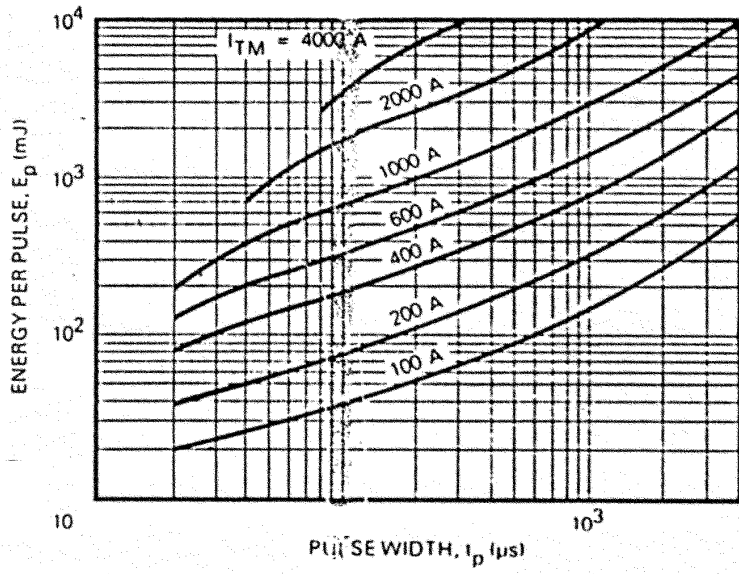
ENERGY PER PULSE FOR TRAPEZOIDAL PULSES.



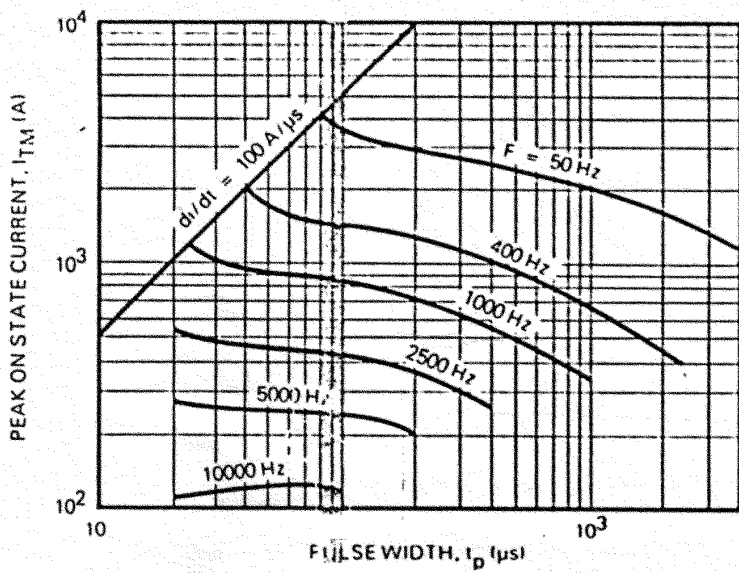
MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT VERSUS PULSE WIDTH FOR $T_c = 65$ °C.



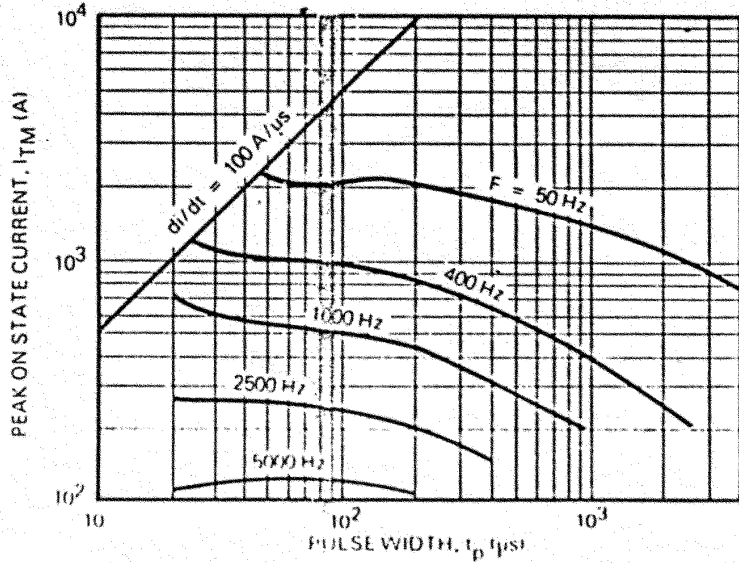
MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT VERSUS PULSE WIDTH FOR $T_c = 90$ °C.



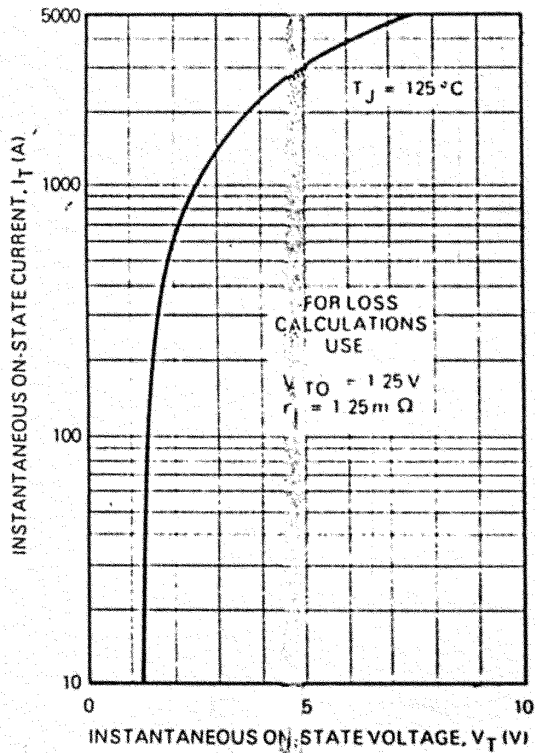
ENERGY PER PULSE FOR TRAPEZOIDAL PULSES.



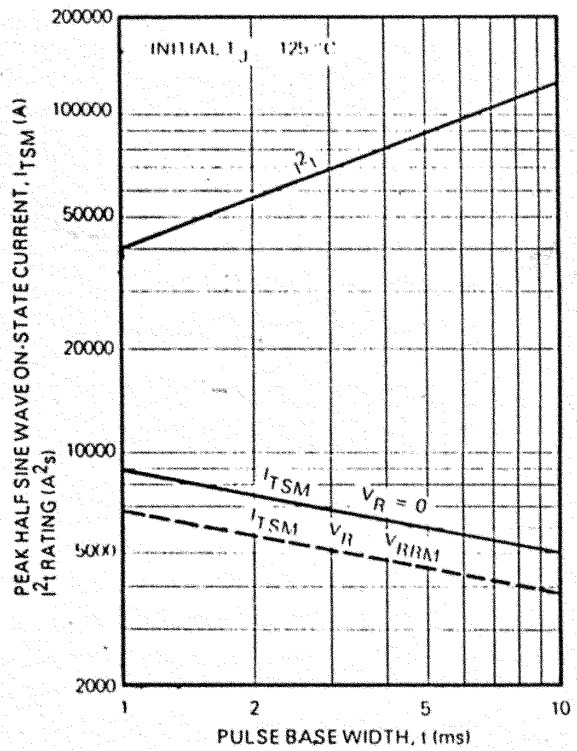
MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT VERSUS PULSE WIDTH FOR $T_C = 65^\circ\text{C}$.



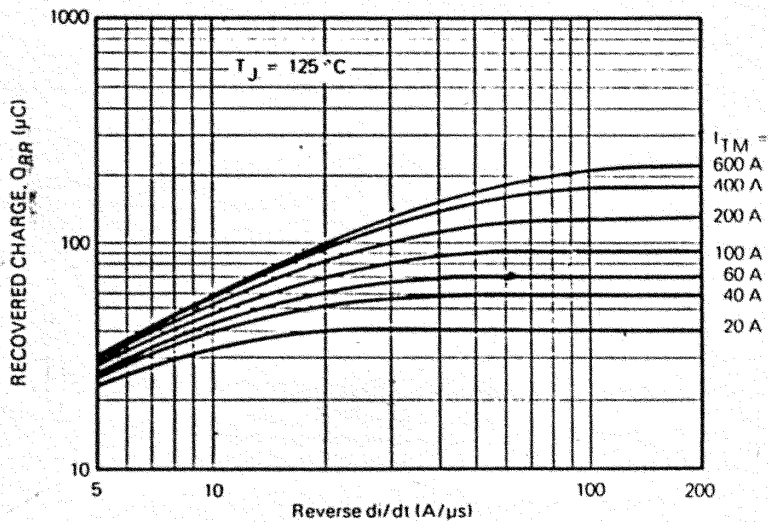
MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT VERSUS PULSE WIDTH FOR $T_C = 80^\circ\text{C}$.



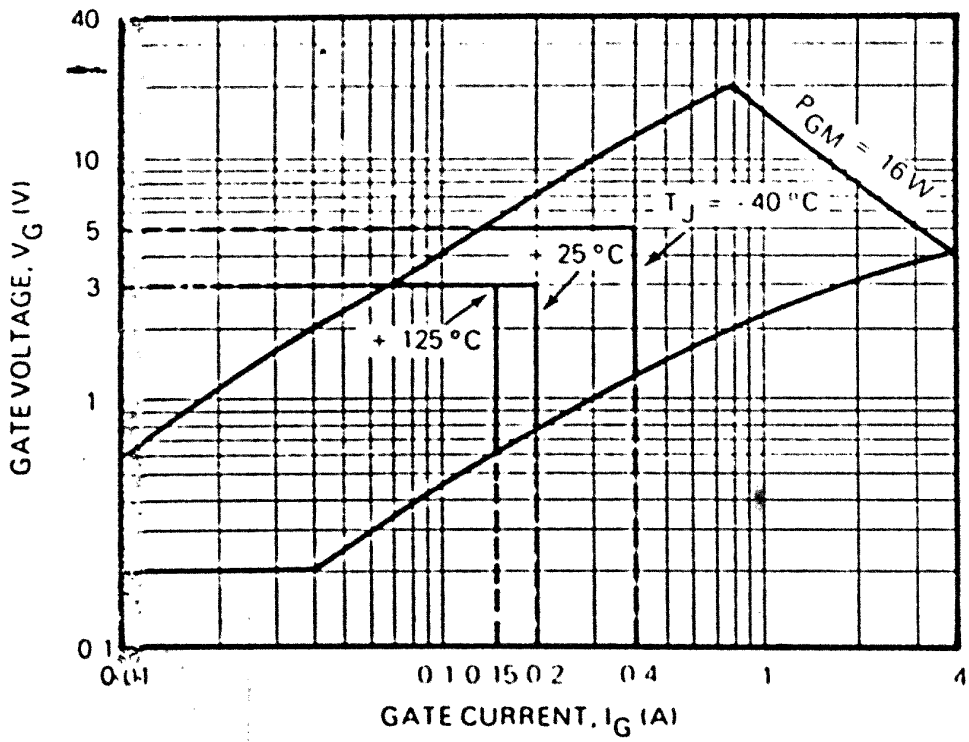
MAXIMUM ON-STATE CONDUCTION CHARACTERISTIC



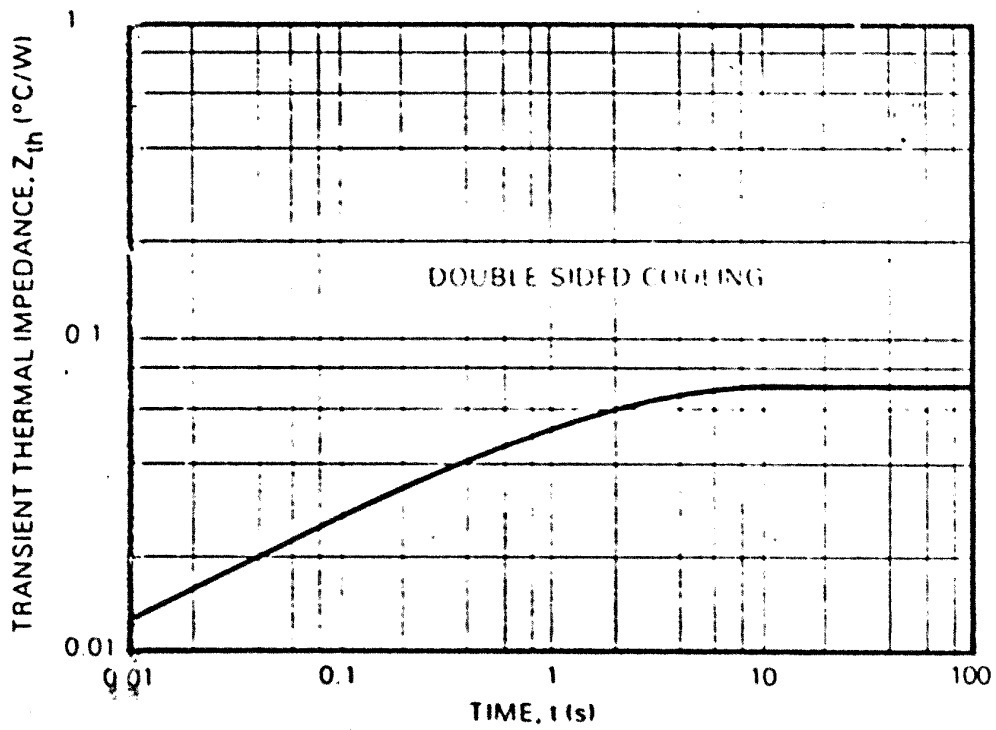
NON REPETITIVE SUB-CYCLE SURGE ON-STATE CURRENT AND I^2t RATING



TYPICAL RECOVERED CHARGE
 (FOR A DEVICE RATED $V_{DRM} = 1000\text{ V}$, $t_q = 20\ \mu\text{s}$)



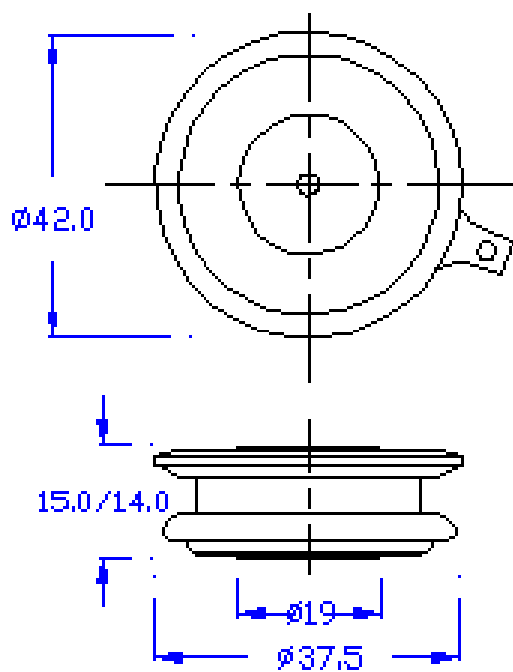
GATE TRIGGER CHARACTERISTICS



TRANSIENT THERMAL IMPEDANCE JUNCTION TO CASE

PACKAGE DETAILS

DO NOT SCALE



Nominal Weight : 50g
Clamping force : 5KN

Case Outline : T