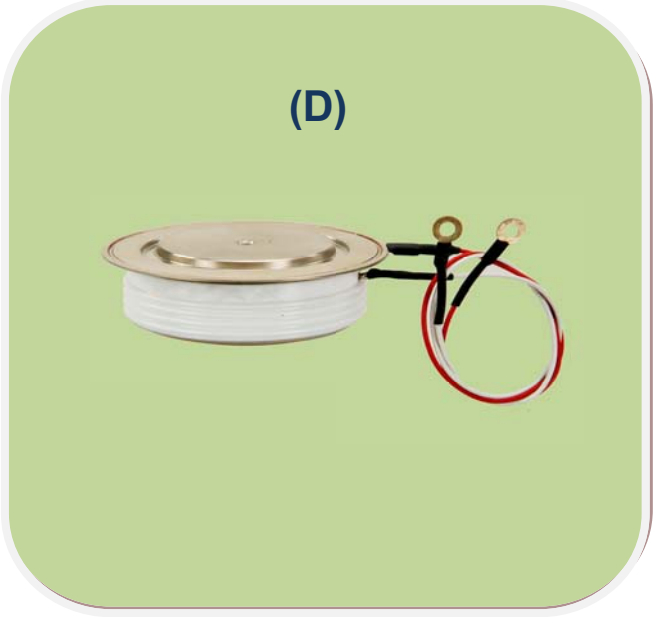
INTERNATIONAL IRI

INVERTER GRADE THYRISTOR

DCR915SD

FEATURES

- Double Side Cooling
- High Surge Capability
- High Mean Current
- Fatigue Free



TYPICAL APPLICATIONS

- High Power Drives
- High Voltage Power Supplies
- DC Motor Control
- Furnace

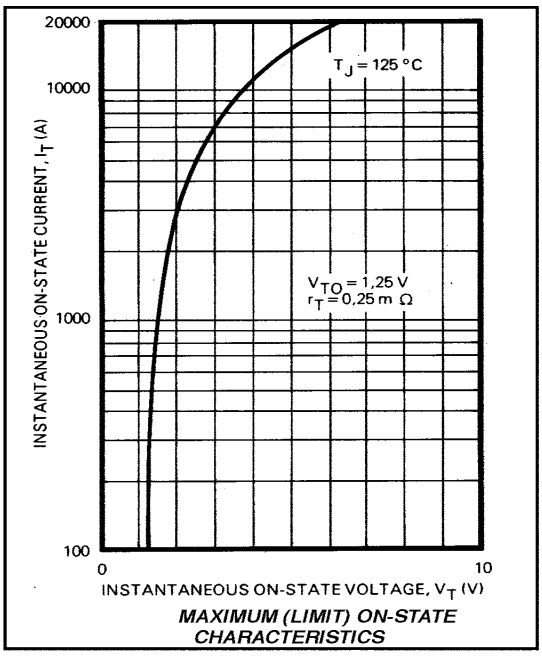
TECHNICAL DATA

DEVICE TYPE	V_{DRM}/V_{RRM} (V)	V_{RSM} (V)
DCR915SD1212	1200	1300
DCR915SD1414	1400	1500

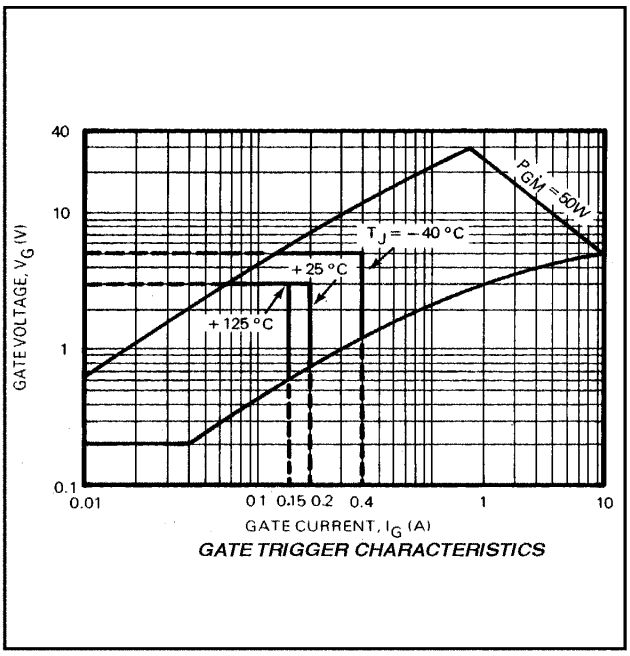
Symbol	Conditions	Values
$I_{T(AV)}$	Half wave resistive load T_c = 80 °C	1080 A
I_{TSM}	Tvj = 125 °C; 10 ms half sine, V_R=0	20.0 KA
I^2T	Tvj = 125 °C; 10 ms half sine, V_R=0	2000000 A ^{2}s
I_{GT}	Tvj = 25 °C; V_{DRM} = 5V	200 mA
V_{GT}	Tvj = 25 °C; V_{DRM} = 5V	3.0 V
dv/dt	Tvj = 125 °C; Voltage = 67% V_{DRM}	*300 V/µs
$[di/dt]_{cr}$	Repetitive 50 Hz	500 A/µs
	Non-repetitive	800 A/µs
t_q	Tvj = 25 °C; I_T = 200 A; V_R = 50 V dv/dt = 200 V/µs di/dt = 30 A/µs	40 µs
V_T	Tvj = 25 °C; I_T = 2000 A	1.75 V max
V_O	Tvj = 125 °C	1.25 V
R_O	Tvj = 125 °C	0.25 mΩ
I_{RRM}/I_{DRM}	Tvj = 125 °C	60 mA
I_H	Tvj = 25 °C; Typical value	100 mA
I_L	Tvj = 25 °C; Typical value	300 mA
$R_{th(j-c)}$	dc	0.020 °C/W
$R_{th(c-h)}$		0.006 °C/W
T_{vj}		+125 °C
T_{stg}		-40....+125 °C
Mounting force		20 - 22 KN
Package Outline		D

* Higher dv/dt selection available.

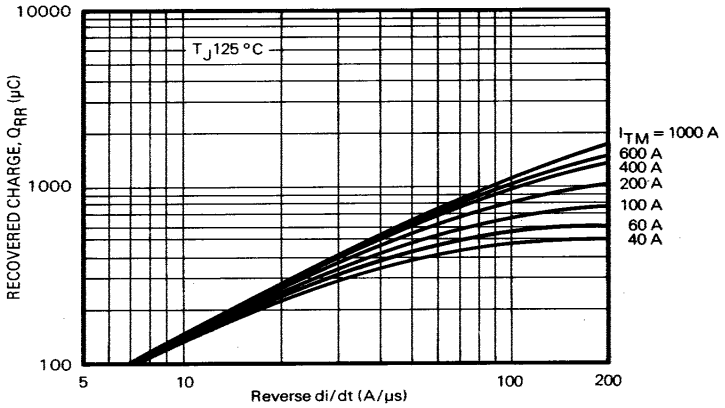
CURVES



MAXIMUM (LIMIT) ON-STATE CHARACTERISTICS

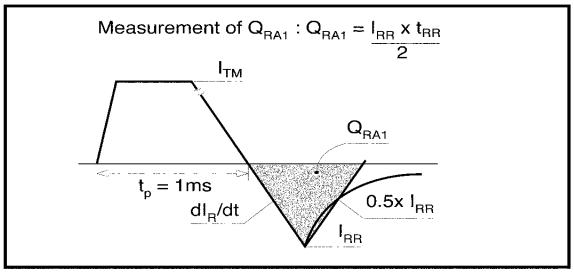


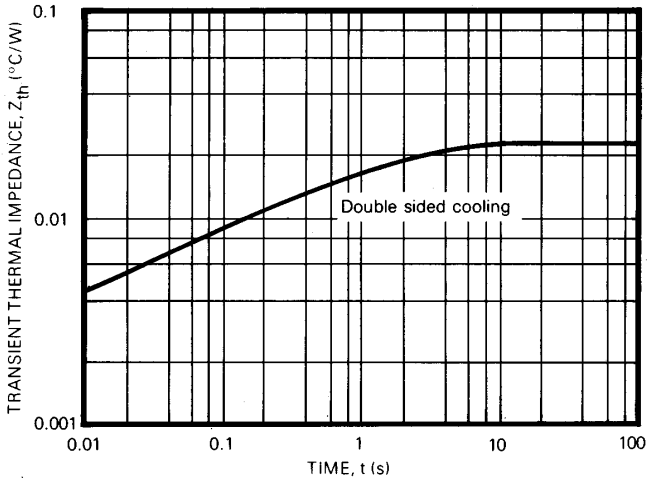
GATE TRIGGER CHARACTERISTICS



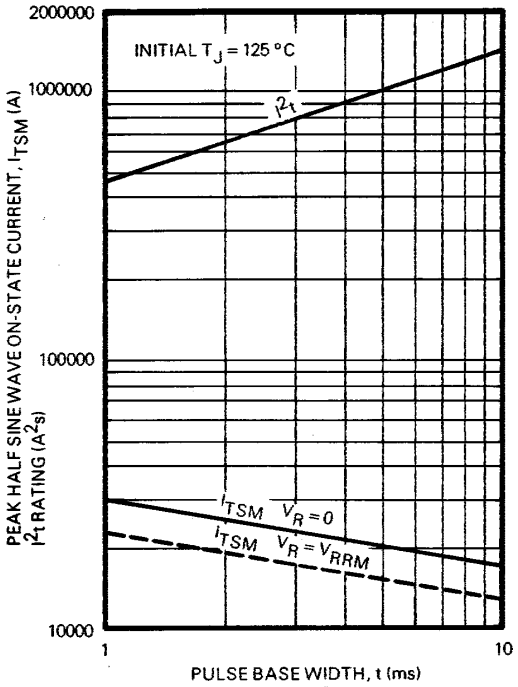
TYPICAL RECOVERED CHARGE (TRAPEZOIDAL CURRENT WAVEFORM)

MEASUREMENT OF RECOVERED CHARGE - Q_{RA1}

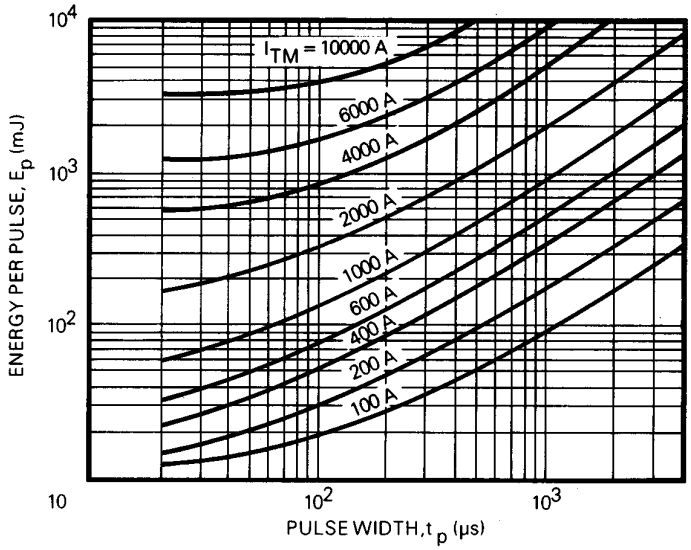




TRANSIENT THERMAL IMPEDANCE - JUNCTION TO CASE

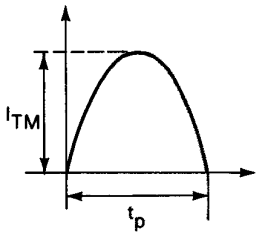


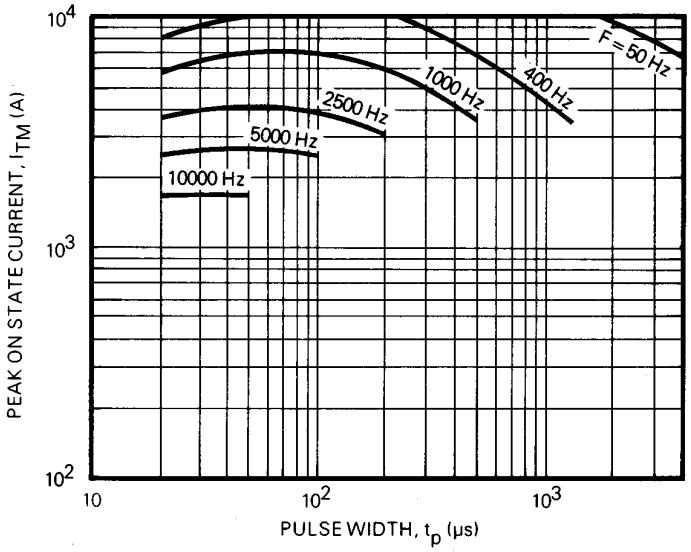
NON-REPETITIVE SUB-CYCLE SURGE ON-STATE CURRENT AND I2t RATING



ENERGY PER PULSE FOR SINUSOIDAL PULSES

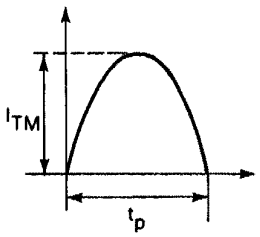
NOTES:
1. $V_D \leq 600V$.
2. $V_R \leq 10V$.
3. R.C Snubber, C = 0.22μF, R = 4.7Ω

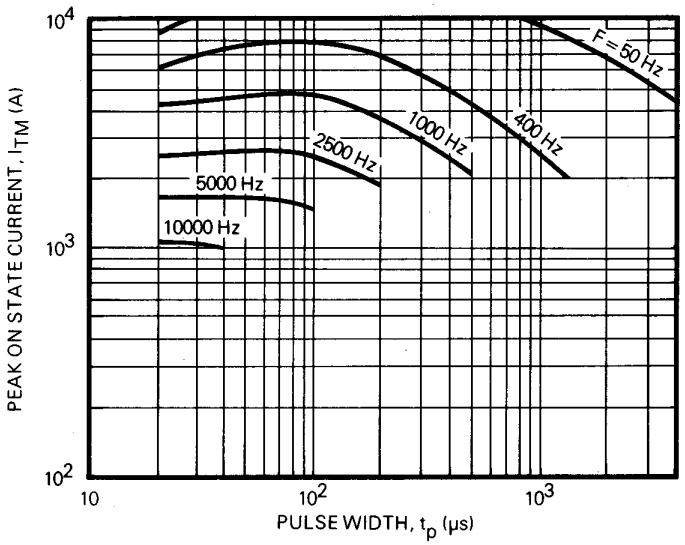




MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs PULSE WIDTH FOR Tc = 65°C

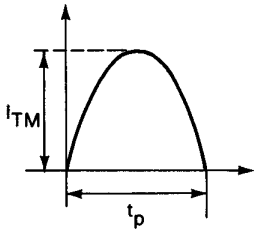
NOTES:
1. $V_D \leq 600V$.
2. $V_R \leq 10V$.
3. R.C Snubber, C = 0.22μF, R = 4.7Ω

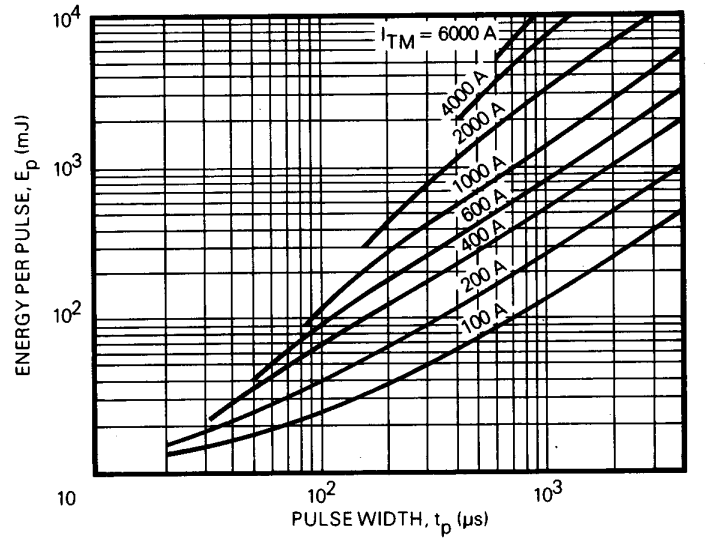




MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs PULSE WIDTH FOR Tc = 90°C

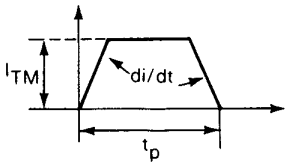
NOTES:
1. $V_D \leq 600V$.
2. $V_R \leq 10V$.
3. R.C Snubber, C = 0.22µF, R = 4.7Ω

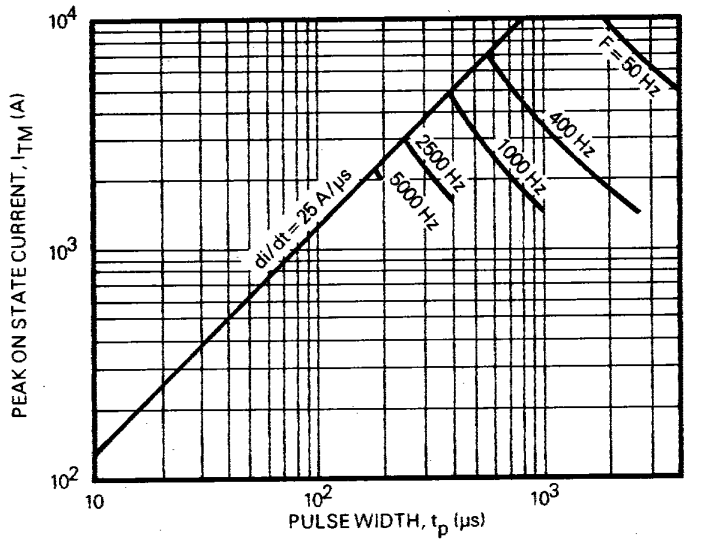




ENERGY PER PULSE FOR TRAPEZOIDAL PULSES

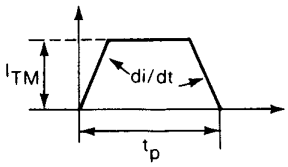
NOTES:
1. dI/dt = 25A/µs
2. $V_D \leq 600V$.
3. $V_R \leq 10V$.
4. R.C Snubber, C = 0.22µF, R = 4.7Ω

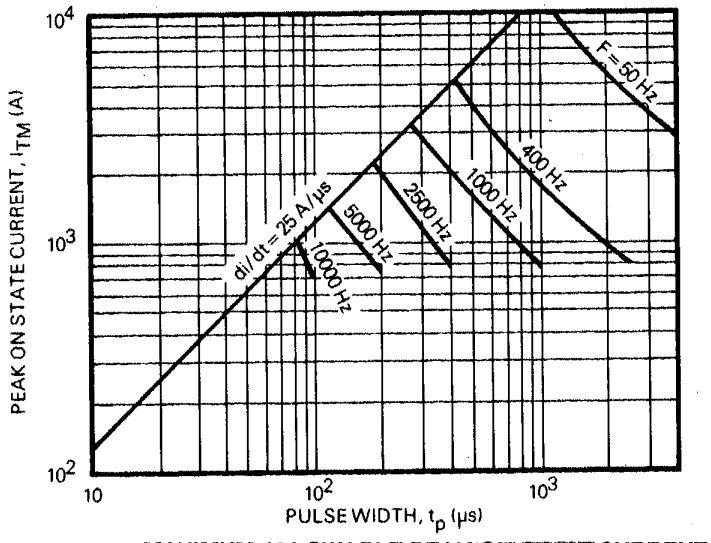




MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs PULSE WIDTH FOR Tc = 65˚C

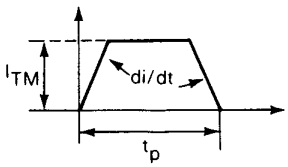
NOTES:
1. dI/dt = 25A/µs
2. $V_D \leq 600V$.
3. $V_R \leq 10V$.
4. R.C Snubber, C = 0.22µF, R = 4.7Ω

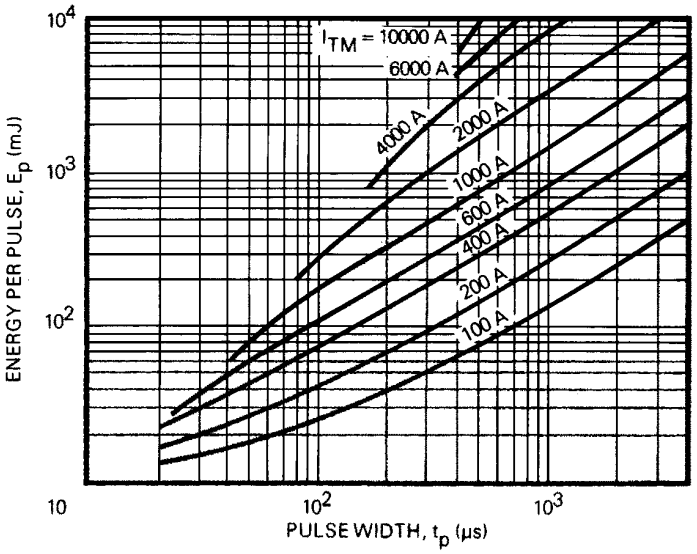




MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs PULSE WIDTH FOR Tc = 90˚C

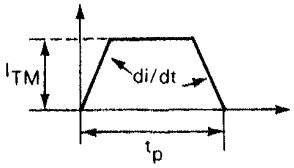
NOTES:
1. dI/dt = 25A/µs
2. $V_D \leq 600V$.
3. $V_R \leq 10V$.
4. R.C Snubber, C = 0.22µF, R = 4.7Ω

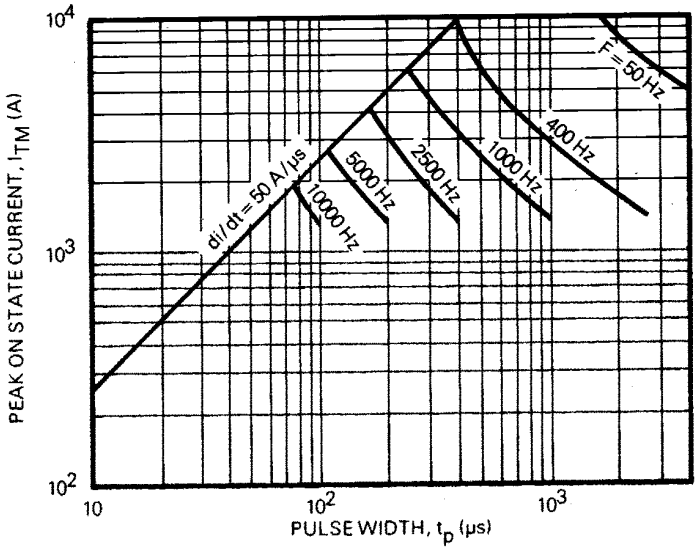




ENERGY PER PULSE FOR TRAPEZOIDAL PULSES

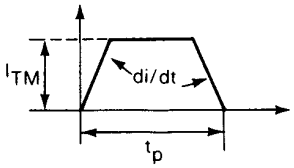
NOTES:
1. dI/dt = 50A/μs
2. $V_D \leq 600V$.
3. $V_R \leq 10V$.
4. R.C Snubber, C = 0.22μF, R = 4.7Ω

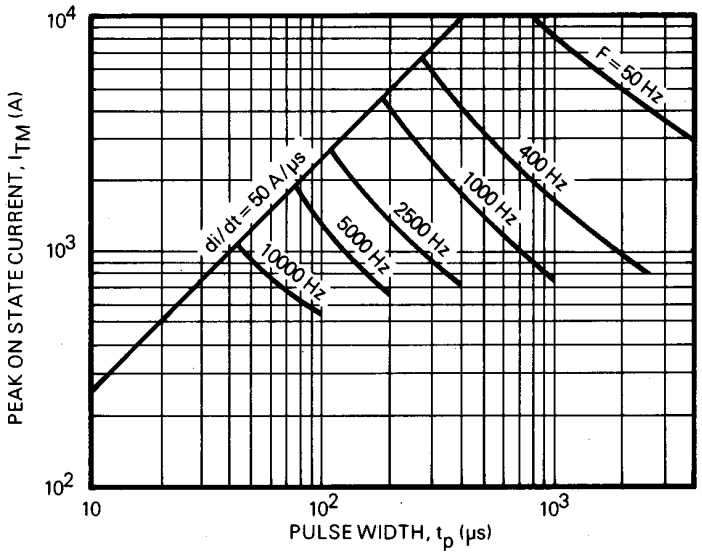




MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs PULSE WIDTH FOR Tc = 65°C

NOTES:
1. dI/dt = 50A/μs
2. $V_D \leq 600V$.
3. $V_R \leq 10V$.
4. R.C Snubber, C = 0.22μF, R = 4.7Ω





MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs PULSE WIDTH FOR Tc = 90˚C

NOTES:
1. dI/dt = 50A/μs
2. $V_D \leq 600V$.
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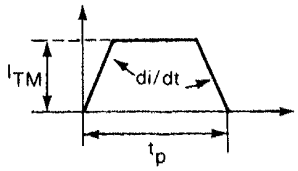
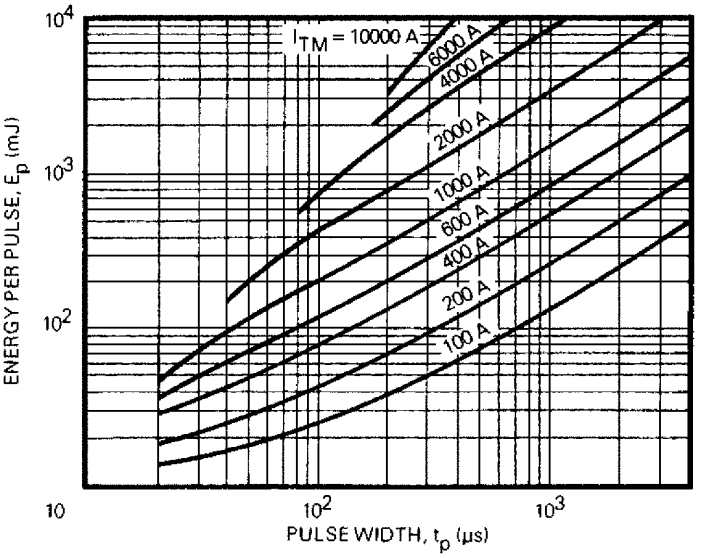
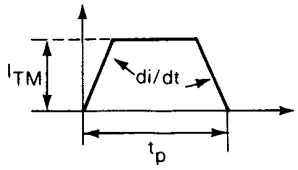
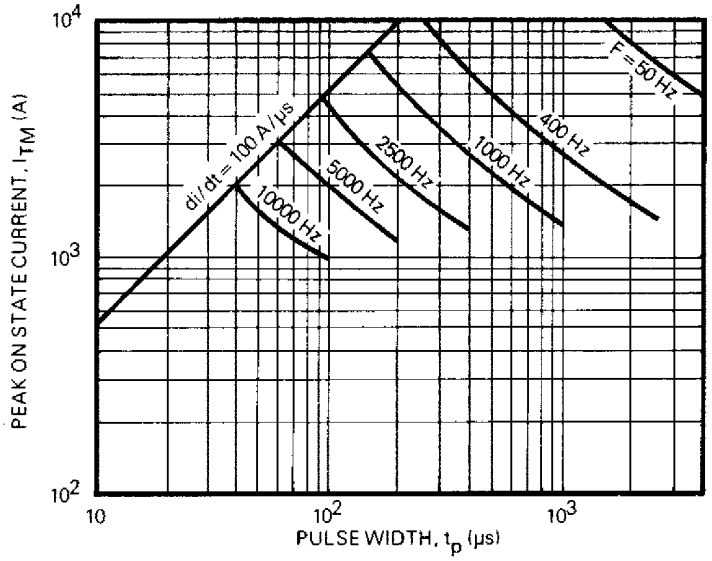




ENERGY PER PULSE FOR TRAPEZOIDAL PULSES

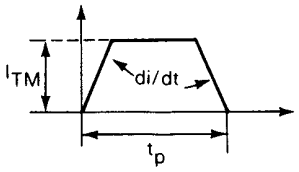
NOTES:
1. dI/dt = 100A/μs
2. $V_D \leq 600V$.
3. $V_R \leq 10V$.
4. R.C Snubber, C = 0.22μF, R = 4.7Ω

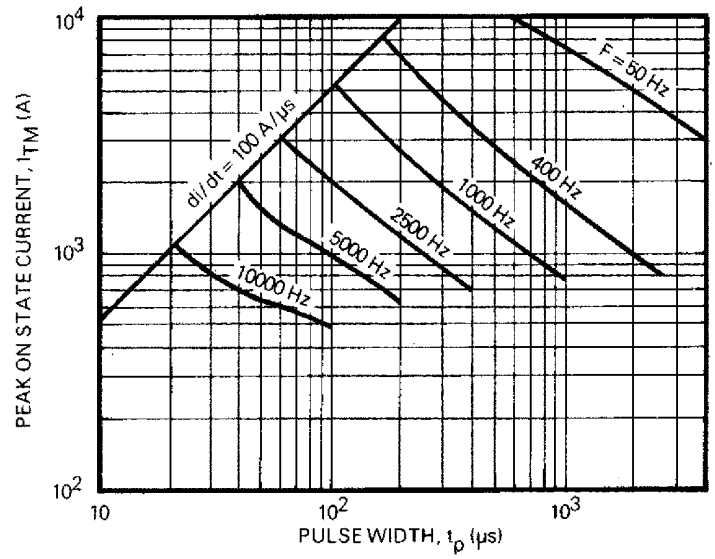




MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs PULSE WIDTH FOR Tc = 65˚C

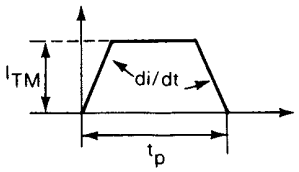
NOTES:
1. dI/dt = 100A/µs
2. $V_D \leq 600V$.
3. $V_R \leq 10V$.
4. R.C Snubber, C = 0.22µF, R = 4.7Ω



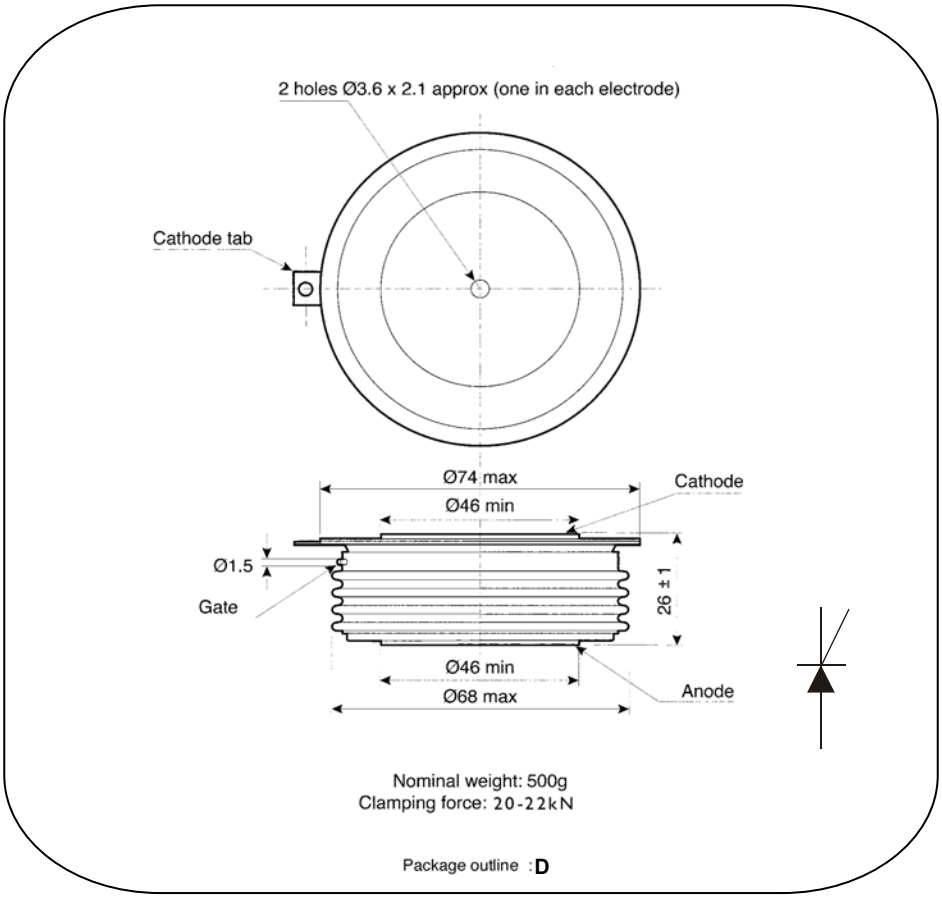


MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs PULSE WIDTH FOR Tc = 90˚C

NOTES:
1. dI/dt = 100A/µs
2. $V_D \leq 600V$.
3. $V_R \leq 10V$.
4. R.C Snubber, C = 0.22µF, R = 4.7Ω



PACKAGE OUTLINE



All dimensions are in mm.

Insel Rectifiers (India) Pvt. Ltd.

(An ISO 9001:2015, ISO 14001:2015 Certified Company)

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