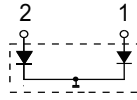


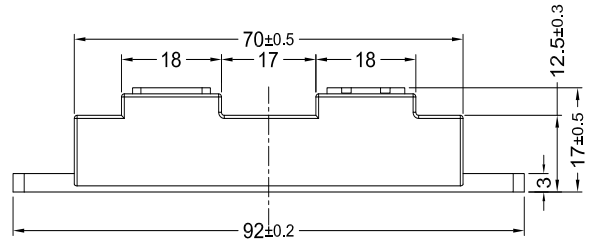
# SRUD30040CTD3

## Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

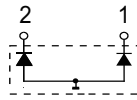
Dimensions in mm (1mm=0.0394")



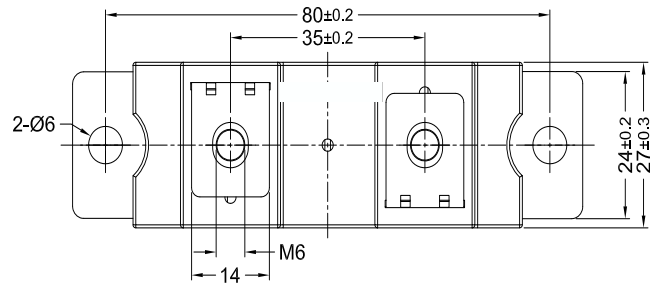
Common Cathode  
SRUD30040CTD3



	$V_{RSM}$ V	$V_{RRM}$ V
SRUD30040CTD3	400	400
SRUD30040ATD3	400	400



Common Anode  
SRUD30040ATD3



Symbol	Test Conditions	Maximum Ratings	Unit
$I_{FRMS}$	$T_C=125^\circ\text{C}$	235	A
$I_{FAVM}$	$T_C=125^\circ\text{C}$ ; rectangular, $d=0.5$ , per chip	150	
$I_{FRM}$	$t_p < 10\mu\text{s}$ ; rep. rating, pulse width limited by $T_{VJM}$	TBD	
$I_{FSM}$	$T_{VJ}=25^\circ\text{C}$	$t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	A
	$T_{VJ}=150^\circ\text{C}$	$t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	
$I^2t$	$T_{VJ}=45^\circ\text{C}$	$t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	$\text{A}^2\text{s}$
	$T_{VJ}=150^\circ\text{C}$	$t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	
$T_{VJ}$		-40...+150	$^\circ\text{C}$
$T_{stg}$		-40...+125	
$T_{Hmax}$		110	
$P_{tot}$		1300	W
$M_d$	Mounting torque (M6)	3.0-4.7/26-41	Nm/lb.in.
	Terminal connection torque (M6)	3.0-4.7/26-41	
$d_s$	Creeping distance on surface	12.7	mm
$d_A$	Strike distance through air	9.6	mm
$a$	Maximum allowable acceleration	50	$\text{m/s}^2$
Weight		93	g



# SRUD30040CTD3

## Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
<b>I<sub>R</sub></b>	T <sub>VJ</sub> =25°C; V <sub>R</sub> =V <sub>RRM</sub>		0.5	mA
	T <sub>VJ</sub> =25°C; V <sub>R</sub> =0.8·V <sub>RRM</sub>		0.5	
	T <sub>VJ</sub> =125°C; V <sub>R</sub> =0.8·V <sub>RRM</sub>		2	
<b>V<sub>F</sub></b>	I <sub>F</sub> =150A; T <sub>VJ</sub> =125°C	1.10	1.55	V
	T <sub>VJ</sub> =25°C	1.20	1.45	
	I <sub>F</sub> =300A; T <sub>VJ</sub> =125°C	1.55	1.95	
	T <sub>VJ</sub> =25°C	1.65	2.09	
<b>V<sub>TO</sub></b>	For power-loss calculations only		1.01	V
<b>r<sub>T</sub></b>	T <sub>VJ</sub> =125°C		2.85	mΩ
<b>R<sub>thJH</sub></b> <b>R<sub>thJC</sub></b>	DC current		0.150	K/W
	DC current		0.100	
<b>t<sub>rr</sub></b>	I <sub>F</sub> =1A; T <sub>VJ</sub> = 25 °C	35	40	ns
	I <sub>F</sub> =150A; T <sub>VJ</sub> = 25 °C	85	110	ns
<b>I<sub>RM</sub></b>	V <sub>R</sub> =200V; -di/dt=200A/us; T <sub>VJ</sub> =125°C	18		A

### FEATURES

- \* International standard package
- \* Copperbase plate
- \* Planar passivated chips
- \* Short recovery time
- \* Low switching losses
- \* RoHS compliant

### APPLICATIONS

- \* Antiparallel diode for high frequency switching devices
- \* Free wheeling diode in converters and motor control circuits
- \* Inductive heating and melting
- \* Uninterruptible power supplies (UPS)
- \* Ultrasonic cleaners and welders

### ADVANTAGES

- \* High reliability circuit operation
- \* Low voltage peaks for reduced protection circuits
- \* Low noise switching
- \* Low losses



# SRUD30040CTD3

## Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

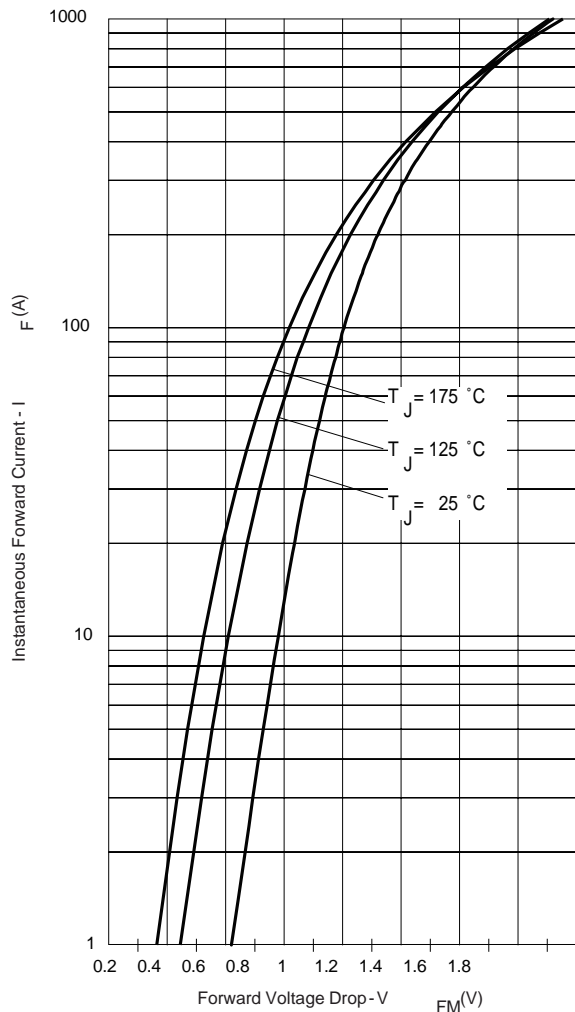


Fig. 1 - Typical Forward Voltage Drop Characteristics

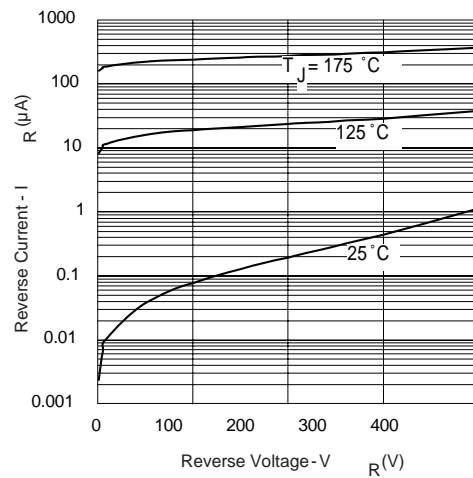


Fig. 2 - Typical Values Of Reverse Current Vs. Reverse Voltage

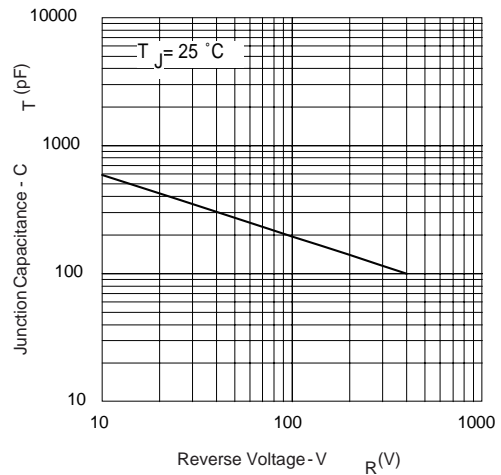


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

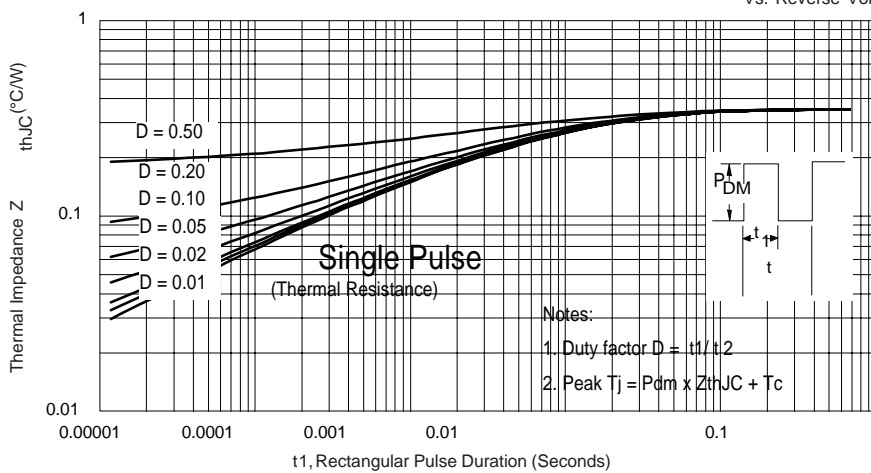


Fig. 4 - Max. Thermal Impedance  $Z_{thjc}$  Characteristics



# SRUD30040CTD3

## Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

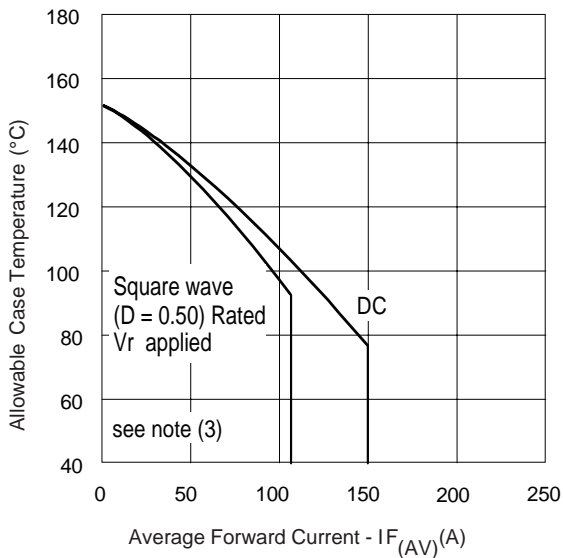


Fig.5 - Max. Allowable Case Temperature Vs. Average Forward Current

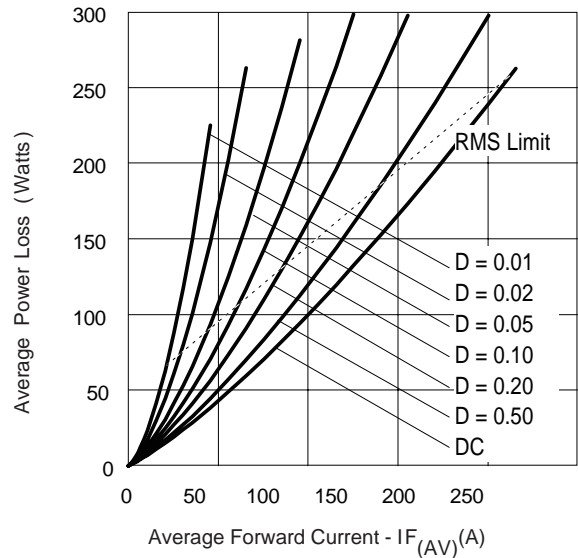


Fig.6 - Forward Power Loss Characteristics

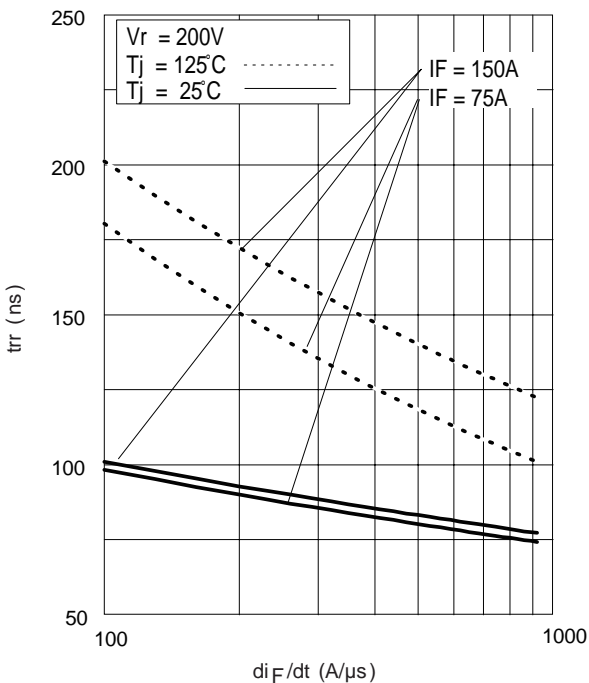


Fig.7 - Typical Reverse Recovery time vs.  $diF/dt$

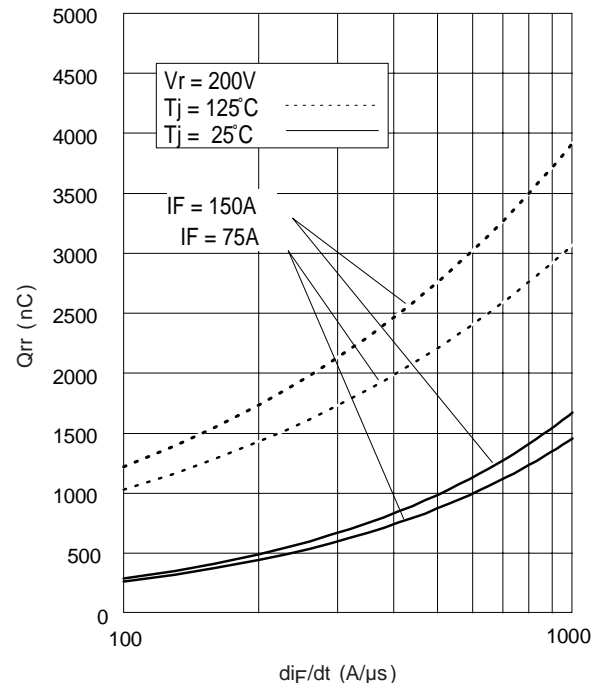


Fig.8 - Typical Stored Charge vs.  $diF/dt$

