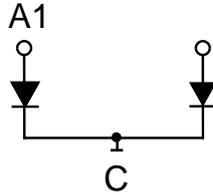
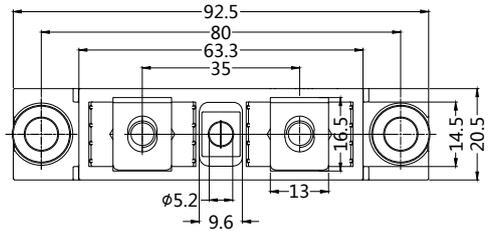
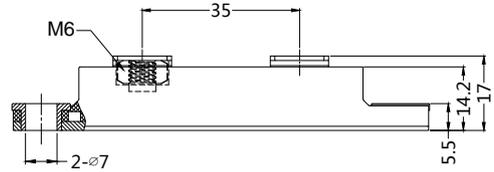


SRUD200xxCT

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules



Dimensions in mm (1mm=0.0394")



	V _{RSM} V	V _{RRM} V
SRUD20040CT	400	400
SRUD20060CT	600	600

Symbol	Test Conditions	Maximum Ratings	Unit
I _{FAVM}	T _C =25°C	200	A
	T _C =110°C	100	
I _{FSM}	T _{VJ} =150°C	900	A
I _{FRM}	T _C =100 °C	150	A
E _{AS}	L=100uH, Duty cycle limited by maximum T _j	1.40	mJ
I _{AS}	L=100uH, Duty cycle limited by maximum T _j	5.0	A
T _{VJ}		-40...+150	°C
T _{stg}		-40...+125	
P _D	T _{case} =25°C	658	W
	T _{case} =100°C	263	
M _d	Mounting torque (M6)	3.40-4.6/30-40	Nm/lb.in.
	Mounting torque , Center Hole (M5)	1.40-2.1/12-18	
	Terminal connection torque (M6)	3.40-4.6/30-40	
a	Vertical pull	9.2/80	Nm/lb.in
	2" lever pull	4.0/35	
a	Maximum allowable acceleration	50	m/s ²
Weight		67	g



SRUD200xxCT

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
I_R	$T_{VJ}=25^{\circ}\text{C}; V_R=V_{RRM}$ $T_{VJ}=25^{\circ}\text{C}; V_R=0.8 \cdot V_{RRM}$ $T_{VJ}=125^{\circ}\text{C}; V_R=0.8 \cdot V_{RRM}$		0.01 0.01 12	mA
V_F	$I_F=100\text{A}; T_{VJ}=125^{\circ}\text{C}$ $T_{VJ}=25^{\circ}\text{C}$ $I_F=200\text{A}; T_{VJ}=25^{\circ}\text{C}$	1.30 1.40 1.70	1.40 1.50 1.80	V
I_{RM}	$-\text{di}/\text{dt}=200\text{A}/\mu\text{s}; I_F=140\text{A}; V_R=200\text{V}$ $T_{VJ}=25^{\circ}\text{C}$ $T_{VJ}=125^{\circ}\text{C}$	7.5 16	14 30	A
R_{thJC}	DC current per leg per module		0.190 0.095	K/W
t_{rr}	$I_F=140\text{A}$ $V_R=30\text{V};$ $-\text{di}/\text{dt}=200\text{A}/\mu\text{s}$ $T_{VJ}=25^{\circ}\text{C}$ $T_{VJ}=125^{\circ}\text{C}$	80 290	120 440	ns

FEATURES

- * International standard package
- * Copper base plate
- * Glass 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



SRUD200xxCT

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

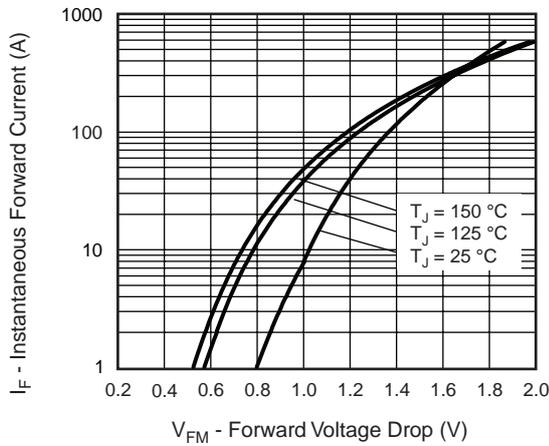


Fig. 1 - Maximum Forward Voltage Drop vs. Instantaneous Forward Current (Per Leg)

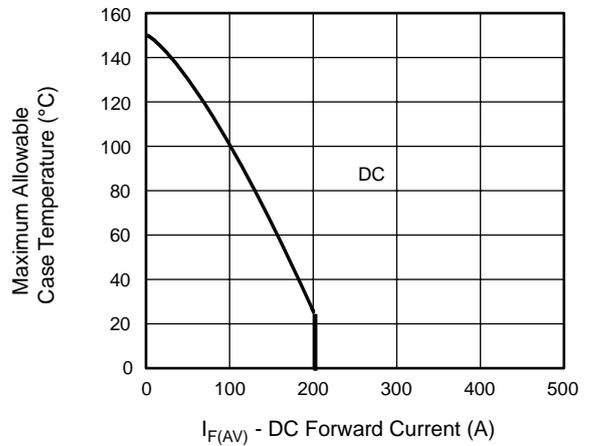


Fig. 4 - Maximum Allowable Case Temperature vs. DC Forward Current (Per Leg)

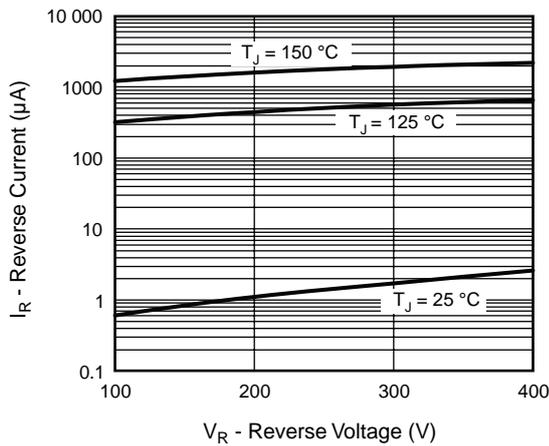


Fig. 2 - Typical Reverse Current vs. Reverse Voltage (Per Leg)

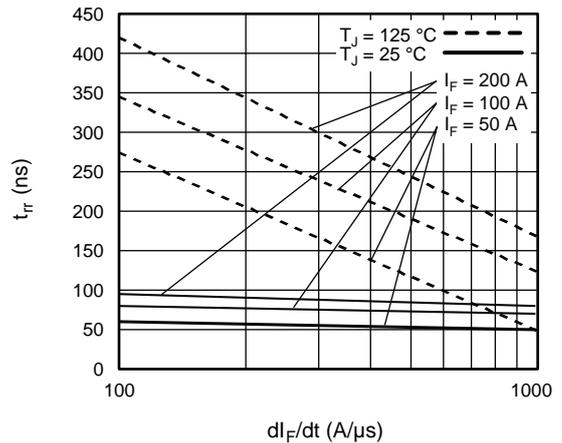


Fig. 5 - Typical Reverse Recovery Time vs. di_F/dt (Per Leg)

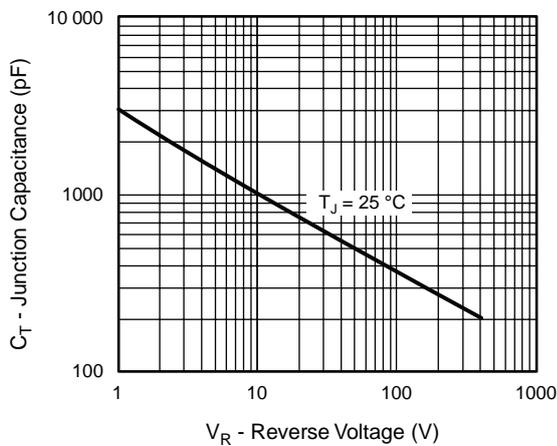


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)

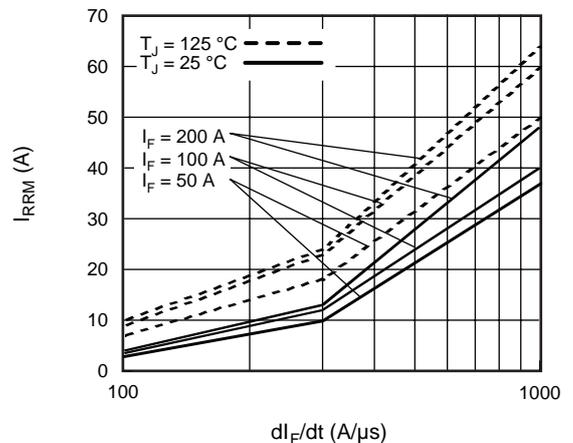


Fig. 6 - Typical Recovery Current vs. di_F/dt (Per Leg)

SRUD200xxCT

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

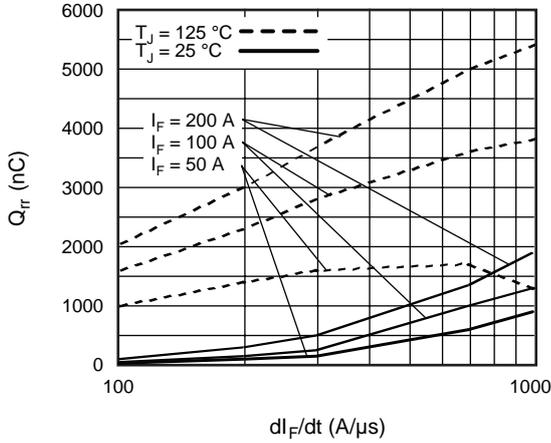


Fig. 7 - Typical Stored Charge vs. di_F/dt (Per Leg)

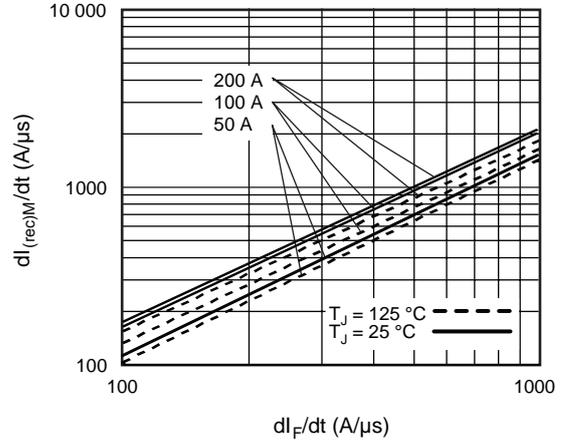


Fig. 8 - Typical $dI_{(rec)M}/dt$ vs. di_F/dt (Per Leg)

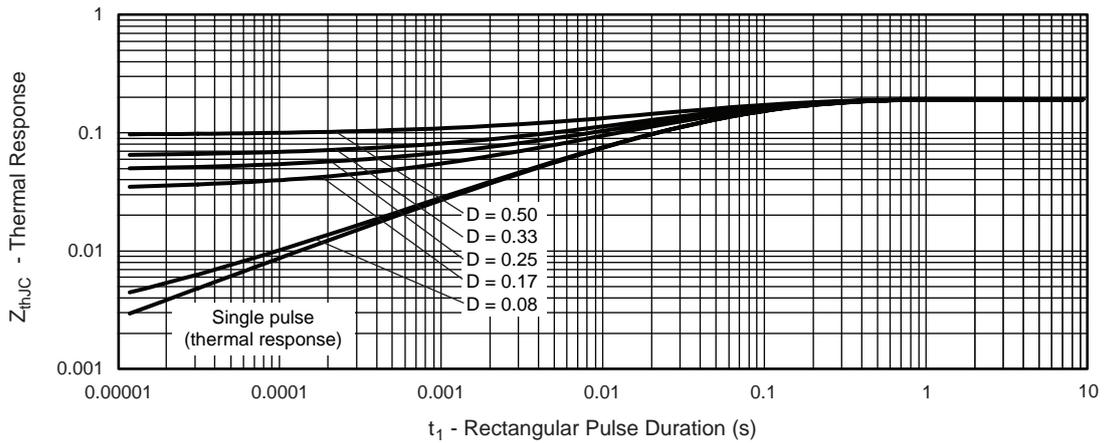


Fig. 9 - Maximum Thermal Impedance Z_{thJC} Characteristics (Per Leg)

SRUD200xxCT

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

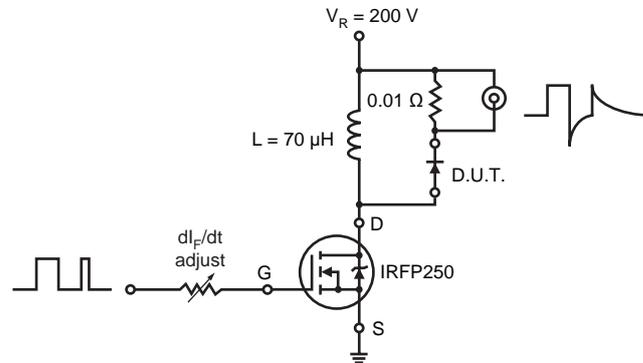
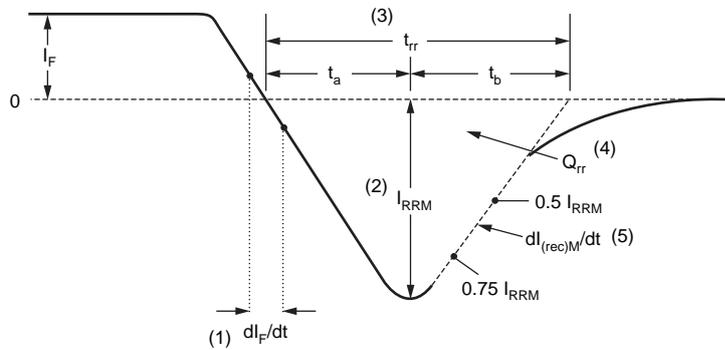


Fig. 10 - Reverse Recovery Parameter Test Circuit



- (1) di_F/dt - rate of change of current through zero crossing
- (2) I_{RRM} - peak reverse recovery current
- (3) t_{rr} - reverse recovery time measured from zero crossing point of negative going I_F to point where a line passing through $0.75 I_{RRM}$ and $0.50 I_{RRM}$ extrapolated to zero current.
- (4) Q_{rr} - area under curve defined by t_{rr} and I_{RRM}
- (5) $di_{(rec)M}/dt$ - peak rate of change of current during t_b portion of t_{rr}

$$Q_{rr} = \frac{t_{rr} \times I_{RRM}}{2}$$

Fig. 11 - Reverse Recovery Waveform and Definitions

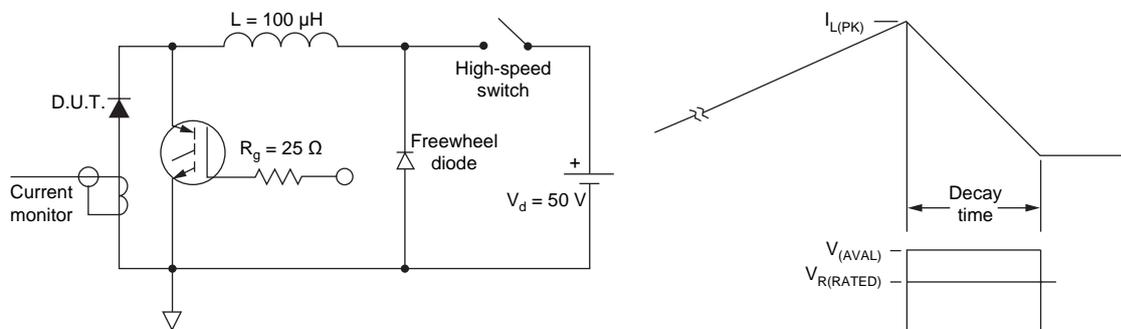


Fig. 12 - Avalanche Test Circuit and Waveforms