



Solid State Devices, Inc.

14701 Firestone Blvd. * La Mirada, Ca 90638
 Phone: (562) 404-4474 * Fax: (562) 404-1773
 ssdi@ssdi-power.com * www.ssdi-power.com

SER100LB60 / SER100LE60 Series

Designer's Data Sheet

Part Number / Ordering Information ^{1/}

SER100	60	L	Screening ^{2/}	= None
				TX = TX Level
				TXV = TXV Level
				S = S Level
	L	Voltage	30 = 300 V	50 = 500 V
			40 = 400 V	60 = 600 V
	L	Configuration		
			LB = without lead	
			LE = with lead	

100 AMP
ULTRAFAST SOFT RECOVERY
POWER SURFACE MOUNT RECTIFIER
300 - 600 VOLT

FEATURES:

- Low Reverse Leakage
- Low Forward Voltage Drop
- Extremely Low Profile: .095" max
- Soft Recovery
- Hermetically Sealed Power Surface Mount Package
- TX, TXV, and Space Level Screening Available^{2/}

MAXIMUM RATINGS	Symbol	Value	Units
Peak Repetitive Reverse Voltage and DC Blocking Voltage	SER100LE30, SER100LB30	V_{RRM}	300
	SER100LE40, SER100LB40	V_{RWM}	400
	SER100LE50, SER100LB50	V_R	500
	SER100LE60, SER100LB60		600
Average Rectified Forward Current (Resistive Load, 60 Hz, Sine Wave, $T_A = 100^\circ\text{C}$)	I_o	100	A
Peak Surge Current (8.3 ms Pulse, Half Sine Wave, $I_o = 0$, $T_A = 25^\circ\text{C}$)	I_{FSM}	500	A
Operating and Storage Temperature	$T_{OP} \text{ \& } T_{STG}$	-55 to +200	$^\circ\text{C}$
Maximum Thermal Resistance (Junction to Case)	$R_{\theta JC}$	0.65 (typ. 0.5)	$^\circ\text{C/W}$

NOTES: Pulsed per MIL-STD-750.

^{1/} For ordering information, price, operating curves, and availability – contact factory.

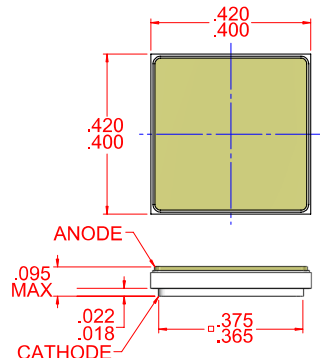
^{2/} Screening based on MIL-PRF-19500. Screening flows available on request.

Sedpack 3

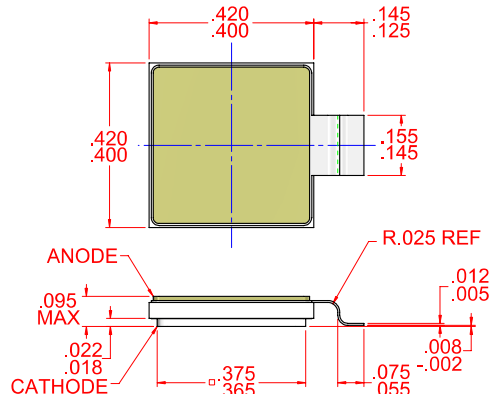


(dime used for size reference)

CASE OUTLINE: Sedpack 3 (LB)



CASE OUTLINE: Sedpack 3 (LE)



NOTE: All specifications are subject to change without notification.
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DATA SHEET #: RC0199B

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ELECTRICAL CHARACTERISTICS		Symbol	Typical	Maximum	Unit
Instantaneous Forward Voltage Drop ($I_F = 10$ A, pulsed)	$T_A = -55^\circ\text{C}$	V_{F1a}	1200	-	mV_{DC}
	$T_A = 25^\circ\text{C}$	V_{F1b}	1070	-	
	$T_A = 100^\circ\text{C}$	V_{F1c}	885	-	
	$T_A = 125^\circ\text{C}$	V_{F1d}	825	-	
	$T_A = 150^\circ\text{C}$	V_{F1e}	770	-	
Instantaneous Forward Voltage Drop ($I_F = 20$ A _{DC} , pulsed)	$T_A = -55^\circ\text{C}$	V_{F2a}	1315	-	mV_{DC}
	$T_A = 25^\circ\text{C}$	V_{F2b}	1200	1300	
	$T_A = 100^\circ\text{C}$	V_{F2c}	1020	-	
	$T_A = 125^\circ\text{C}$	V_{F2d}	960	1030	
	$T_A = 150^\circ\text{C}$	V_{F2e}	890	-	
Instantaneous Forward Voltage Drop ($I_F = 40$ A _{DC} , pulsed)	$T_A = -55^\circ\text{C}$	V_{F3a}	1465	-	mV_{DC}
	$T_A = 25^\circ\text{C}$	V_{F3b}	1365	-	
	$T_A = 100^\circ\text{C}$	V_{F3c}	1200	-	
	$T_A = 125^\circ\text{C}$	V_{F3d}	1140	-	
	$T_A = 150^\circ\text{C}$	V_{F3e}	1090	-	
Instantaneous Forward Voltage Drop ($I_F = 50$ A _{DC} , pulsed)	$T_A = -55^\circ\text{C}$	V_{F4a}	1525	-	mV_{DC}
	$T_A = 25^\circ\text{C}$	V_{F4b}	1425	1560	
	$T_A = 100^\circ\text{C}$	V_{F4c}	1265	-	
	$T_A = 125^\circ\text{C}$	V_{F4d}	1215	1310	
	$T_A = 150^\circ\text{C}$	V_{F4e}	1160	-	
Instantaneous Forward Voltage Drop ($I_F = 100$ A _{DC} , pulsed)	$T_A = -55^\circ\text{C}$	V_{F5a}	1770	-	mV_{DC}
	$T_A = 25^\circ\text{C}$	V_{F5b}	1685	-	
	$T_A = 100^\circ\text{C}$	V_{F5c}	1540	-	
	$T_A = 125^\circ\text{C}$	V_{F5d}	1490	-	
	$T_A = 150^\circ\text{C}$	V_{F5e}	1450	-	
Reverse Leakage Current (Rated V_R , pulsed)	$T_A = 25^\circ\text{C}$	I_{R1}	2	25	μA
	$T_A = 100^\circ\text{C}$	I_{R2}	20	-	
	$T_A = 125^\circ\text{C}$	I_{R3}	75	750	
	$T_A = 150^\circ\text{C}$	I_{R4}	200	-	
Junction Capacitance ($T_A = 25^\circ\text{C}$, $f = 1$ MHz)	$V_R = 5$ V	C_J	375	-	pF
	$V_R = 10$ V		280	400	
Reverse Recovery	$I_F = 0.5$ A, $I_R = 1$ A, $I_{RR} = 0.25$ A	t_{RR1}	35	50	ns
	$I_F = 1$ A, $I_R = 1$ A, $I_{RR} = 0.1$ A	t_{RR2}	110	-	ns
	$I_F = 10$ A, $dI_F/dt = 45$ A/ μs , $T_A = 25^\circ\text{C}$	t_{RR3}	63	-	ns
	$I_F = 10$ A, $dI_F/dt = 45$ A/ μs , $T_A = 25^\circ\text{C}$	I_{RM3}	2.4	-	A
	$I_F = 10$ A, $dI_F/dt = 100$ A/ μs , $T_A = 25^\circ\text{C}$	t_{RR4}	60	-	ns
	$I_F = 10$ A, $dI_F/dt = 100$ A/ μs , $T_A = 25^\circ\text{C}$	I_{RM4}	5	-	A

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Reverse Recovery

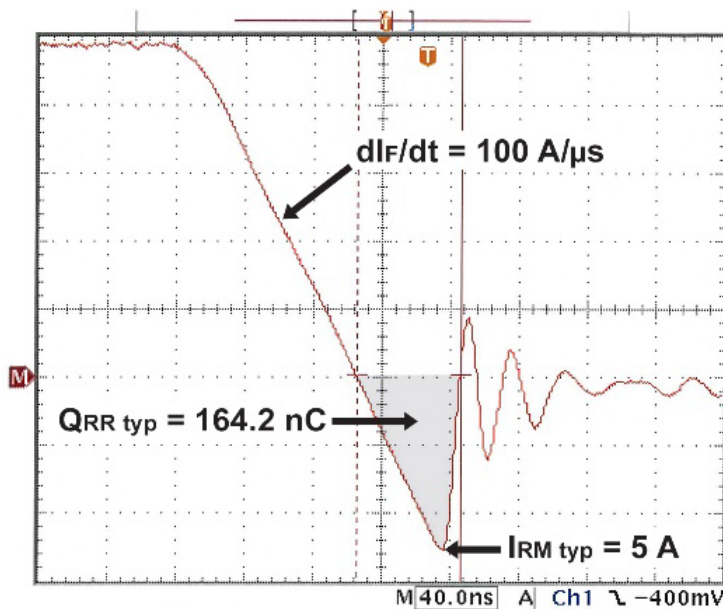
$$I_F = 10 \text{ A}$$

$$dI_F/dt = 100 \text{ A}/\mu\text{s}$$

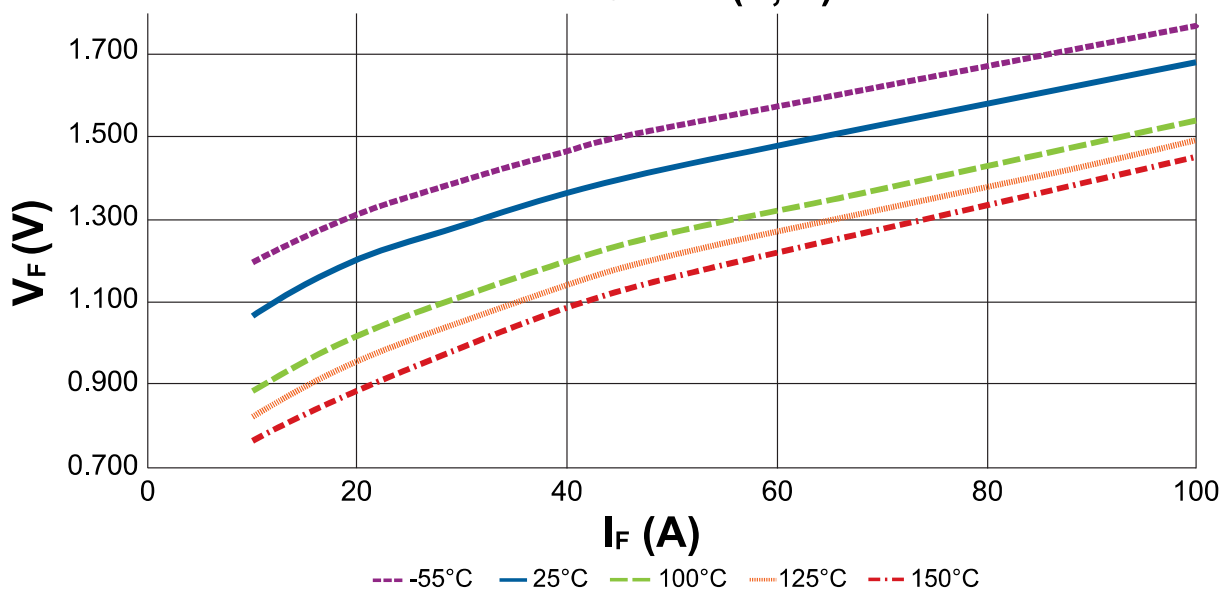
$$T_A = 25^\circ\text{C}$$

$$t_{RR \text{ typ}} = 140 \text{ ns}$$

$$Q_{RR \text{ typ}} = 230 \text{ nC}$$



$$V_F \text{ TYPICAL} = f(I_F, T)$$



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