Solid State Devices, Inc.
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SER30KB60 / SER30KE60 Series

30 AMP 300-600 VOLT ULTRAFAST POWER SURFACE MOUNT RECTIFIER

Designer's Data Sheet

Part Number / Ordering Information [1/]

SER30__ 60 __

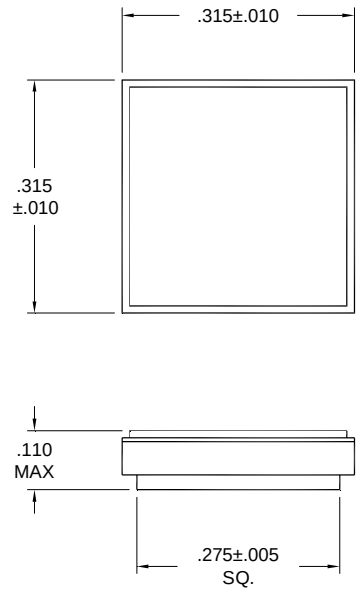
- **Screening**[2/] = None, TX = TX Level, TXV = TXV Level, S = S Level
- **Voltage**
- **Configuration**: KB = without lead, KE = with lead

FEATURES:

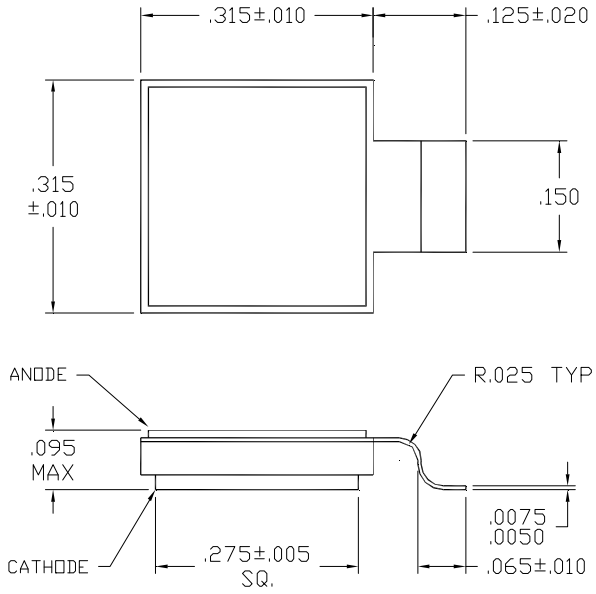
- Low Reverse Leakage
- Low Forward Voltage Drop
- Hermetically Sealed Power Surface Mount Package
- TX, TXV, and Space Level Screening Available[2/]

MAXIMUM RATINGS		Symbol	Value	Units
Peak Repetitive Reverse Voltage and DC Blocking Voltage	SER30KE30, SER30KB30 SER30KE40, SER30KH40 SER30KE50, SER30KB50 SER30KE60, SER30KB60	V_{RRM} V_{RWM} V_R	300 400 500 600	**Volts**
Average Rectified Forward Current (Resistive Load, 60 Hz, Sine Wave, T_A = 100°C)		I_O	30	**Amps**
Peak Surge Current (8.3 ms Pulse, Half Sine Wave, Superimposed on I_O, Allow Junction to Reach Equilibrium between Pulses, T_A = 25°C)		I_{FSM}	400	**Amps**
Operating and Storage Temperature		T_{OP} & T_{stg}	-55 to +200	°C
Maximum Thermal Resistance Junction to Case		$R_{\theta JC}$	1.2	°C/W

CASE OUTLINE: KB60 Series



CASE OUTLINE: KB60 Series



NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.	DATA SHEET #: RC0128A	DOC

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ELECTRICAL CHARACTERISTICS		Symbol	Minimum	Maximum	Unit
Instantaneous Forward Voltage Drop	T_A = -55°C	V_{F1a}	1070	-	
(I_F = 5 A, 300 μsec Pulse)	T_A = 25°C	V_{F1b}	950	-	
	T_A = 100°C	V_{F1c}	760	-	**mV_{DC}**
	T_A = 125°C	V_{F1d}	710	-	
	T_A = 150°C	V_{F1e}	650	-	
Instantaneous Forward Voltage Drop	T_A = -55°C	V_{F2a}	1150	-	
(I_F =10 $A_{DC,}$ 300 μsec Pulse)	T_A = 25°C	V_{F2b}	1050	1150	
	T_A = 100°C	V_{F2c}	860	-	**mV_{DC}**
	T_A = 125°C	V_{F2d}	810	975	
	T_A = 150°C	V_{F2e}	750	-	
Instantaneous Forward Voltage Drop	T_A = -55°C	V_{F3a}	1260	-	
(I_F =20 $A_{DC,}$ T_A = +125°C, 300 μsec Pulse)	T_A = 25°C	V_{F3b}	1170	-	
	T_A = 100°C	V_{F3c}	1000	-	**mV_{DC}**
	T_A = 125°C	V_{F3d}	950	-	
	T_A = 150°C	V_{F3e}	880	-	
Instantaneous Forward Voltage Drop	T_A = -55°C	V_{F4a}	1340	-	
(I_F =30 $A_{DC,}$ T_A = +125°C, 300 μsec Pulse)	T_A = 25°C	V_{F4b}	1260	1400	
	T_A = 100°C	V_{F4c}	1100	-	**mV_{DC}**
	T_A = 125°C	V_{F4d}	1050	1250	
	T_A = 150°C	V_{F4e}	990	-	
Instantaneous Forward Voltage Drop	T_A = -55°C	V_{F5a}	1480	-	
(I_F =50 $A_{DC,}$ T_A = +125°C, 300 μsec Pulse)	T_A = 25°C	V_{F5b}	1400	-	
	T_A = 100°C	V_{F5c}	1240	-	**mV_{DC}**
	T_A = 125°C	V_{F5d}	1190	-	
	T_A = 150°C	V_{F5e}	1150	-	
Reverse Leakage Current	T_A = 25°C	I_{R1}	0.1	10	
(Rated V_R, 300 μsec pulse minimum)	T_A = 100°C	I_{R2}	6	-	**uA**
	T_A = 125°C	I_{R3}	25	500	
	T_A = 150°C	I_{R4}	80	-	
Junction Capacitance	V_R= 5 V	C_J	190	-	**pF**
(V_R = 5 V_{DC}, T_A = 25°C, f = 1 MHz)	V_R = 10 V		140	250	
Reverse Recovery					
I_F= 0.5 A, I_R= 1 A, I_{rr}= 0.25 A		t_{rr1}	32	35	**ns**
I_F= 1 A, I_R= 1 A, I_{rr}= 0.1 A		t_{rr2}	75	-	**ns**
I_F= 10 A, dI_F/dt= 45 A/us, Ta= 25 °C		t_{rr3}	46	-	**ns**
I_F= 10 A, dI_F/dt= 45 A/us, Ta= 25 °C		I_{RM3}	1.8	-	**A**
I_F= 10 A, dI_F/dt= 45 A/us, Ta= 100 °C		t_{rr4}	115	-	**ns**
I_F= 10 A, dI_F/dt= 45 A/us, Ta= 100 °C		I_{RM4}	3.8	-	**A**
I_F= 10 A, dI_F/dt= 100 A/us, Ta= 25 °C		t_{rr5}	45	-	**ns**
I_F= 10 A, dI_F/dt= 100 A/us, Ta= 25 °C		I_{RM5}	3.7	-	**A**
Forward Recovery	IF= 1 A	t_{fr}	60	-	**ns**
		V_{fr}	880	-	**mV**

NOTES:

1/ For Ordering Information, Price, Operating Curves, and Availability – Contact Factory.

2/ Screening Based on MIL-PRF-19500.