



Solid State Devices, Inc.

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SED20HB45, SED20HE45 and SED20HF45

Designer's Data Sheet

Part Number / Ordering Information ^{1/}

SED20 _ 45 _

L Screening ^{2/} = None
TX = TX Level
TXV = TXV Level
S = S Level

L Configuration

HB = without lead
HE = with lead
HF = with lead, reverse polarity

**20 AMP
45 VOLTS
SCHOTTKY RECTIFIER**

FEATURES:

- Low Reverse Leakage
- Low Forward Voltage Drop
- Hermetically Sealed Power Surface Mount Package
- Guard Ring for Overvoltage Protection
- Eutectic Die Attach
- 175°C Operating Temperature
- TX, TXV, and Space Level Screening Available ^{2/}

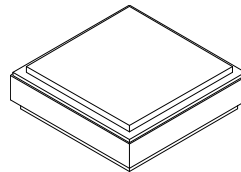
MAXIMUM RATINGS		Symbol	Value	Units
Peak Repetitive Reverse Voltage and DC Blocking Voltage		V_{RRM} V_{RWM} V_R	45	Volts
Average Rectified Forward Current (Resistive Load, 60 Hz, Sine Wave, $T_A = 100^\circ\text{C}$)		I_O	20	Amps
Peak Surge Current (8.3 ms Pulse, Half Sine Wave, 1 pulse, $T_A = 25^\circ\text{C}$)		I_{FSM}	250	Amps
Operating and Storage Temperature		$T_{OP} \& T_{stg}$	-55 to +175	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case	SED20HB45 SED20HE45 SED20HF45	$R_{\theta JC}$	1.25 1.25 3.00	$^\circ\text{C/W}$

Notes:

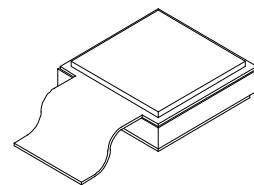
^{1/} For Ordering Information, Price, Operating Curves, and Availability –
Contact Factory.

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

SEDPACK 1



HB Series

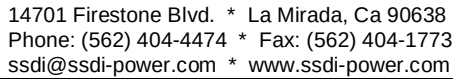


HE / HF Series

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

DATA SHEET #: RSED49B

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ELECTRICAL CHARACTERISTICS		Symbol	Maximum	Typical	Unit
Instantaneous Forward Voltage Drop (I _F =5 A _{DC} , 300-500 μsec Pulse)	T _A = -55°C	V _{F1}	-	0.58	V _{DC}
	T _A = 25°C	V _{F2}	0.52	0.48	
	T _A = 125°C	V _{F3}	-	0.36	
Instantaneous Forward Voltage Drop (I _F =10 A _{DC} , 300-500 μsec Pulse)	T _A = -55°C	V _{F4}	-	0.62	V _{DC}
	T _A = 25°C	V _{F5}	0.56	0.54	
	T _A = 125°C	V _{F6}	0.49	0.44	
Instantaneous Forward Voltage Drop (I _F =20 A _{DC} , 300-500 μsec Pulse)	T _A = -55°C	V _{F7}	-	0.69	V _{DC}
	T _A = 25°C	V _{F8}	0.69	0.64	
	T _A = 125°C	V _{F9}	-	0.57	
Reverse Leakage Current (Rated V _R , 300 μsec pulse minimum)	T _A = 25°C	I _{R1}	0.25	0.02	mA
	T _A = 100°C	I _{R2}	-	3	
	T _A = 125°C	I _{R3}	25	18	
Junction Capacitance (T _A = 25°C, f = 1 MHz)	V _R = 5V	C _{J1}	900	780	pF
	V _R = 10V	C _{J2}	-	580	

Technical drawing of a square cathode. The drawing shows a square with a central square hole. The outer square has a side length of $.225 \pm .010$. The inner square hole has a side length of $.185 \pm .005$. The thickness of the cathode is indicated as $.095 \text{ MAX}$. The top surface is labeled "ANODE" and the bottom surface is labeled "CATHODE". The bottom surface is also labeled "SQ." indicating a square shape.

Technical drawing of a cathode ray tube (CRT) showing top and side views with dimensions.

Top View Dimensions:

- Overall width: $.225 \pm .010$
- Overall height: $.225 \pm .010$
- Inner square width: $.135 \text{ MAX}$
- Inner square height: $.150 \pm .005$

Side View Dimensions:

- Overall height: $.095 \text{ MAX}$
- Inner square width: $.185 \pm .005 \text{ SQ.}$
- Inner square height: $.065 \pm .010$
- Inner square corner radius: $R.025 \text{ TYP}$
- Inner square bottom thickness: $.008$
- Inner square bottom width: $.005$

Labels:

- ANODE
- CATHODE

Technical drawing of a 1/4 WATT 5% RESISTOR showing dimensions and labels. The drawing includes the following dimensions and labels:

- Top horizontal dimension: $.225 \pm .010$
- Top right horizontal dimension: $.135 \text{ MAX}$
- Left vertical dimension: $.225 \pm .010$
- Right vertical dimension: $.150 \pm .005$
- Bottom left label: CATHODE
- Bottom left vertical dimension: $.095 \text{ MAX}$
- Bottom left label: ANODE
- Bottom center horizontal dimension: $.205 \pm .005 \text{ SQ.}$
- Bottom right horizontal dimension: $.065 \pm .010$
- Bottom right horizontal dimension: $.008 \pm .005$
- Bottom right label: R.025 TYP

Figure 10 is a line graph showing the variation of VF (V) versus IF (A) for different temperatures: -55C, 25C, 100C, 125C, and 150C. The x-axis represents IF (A) from 0 to 40, and the y-axis represents VF (V) from 0.2 to 0.9. The graph shows that VF increases with IF for all temperatures, and the rate of increase is higher at lower temperatures.

IF (A)	-55C (V)	25C (V)	100C (V)	125C (V)	150C (V)
0	0.51	0.40	0.29	0.27	0.22
5	0.57	0.47	0.38	0.34	0.30
10	0.62	0.53	0.45	0.41	0.36
15	0.66	0.58	0.51	0.47	0.42
20	0.69	0.63	0.55	0.51	0.46
30	0.74	0.70	0.61	0.57	0.52
40	0.79	0.75	0.65	0.61	0.56

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