



**Solid State Devices, Inc.**

14701 Firestone Blvd. \* La Mirada, Ca 90638  
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**SED90HE25CT1i and  
 SED90HE35CT1i Series**

**SURFACE MOUNT  
 90 AMP, 25 – 35 VOLTS  
 SUPER CENTERTAP  
 SCHOTTKY RECTIFIER**

**Designer's Data Sheet**

**Part Number / Ordering Information** <sup>1/</sup>

SED90HE 25 CT    i   

L Screening<sup>2/</sup>  
      = None  
   TX = TX Level  
   TXV = TXV Level  
   S = S Level  
 L i = Isolated Case  
  
 L Lead Orientation  
   1 = Front Mount  
   2 = Side Mount  
   3 = Split Mount  
  
 L Voltage  
   25 = 25 volts  
   35 = 35 volts

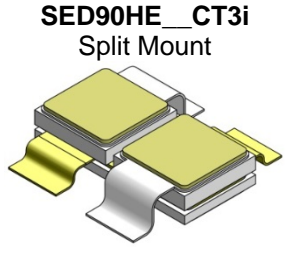
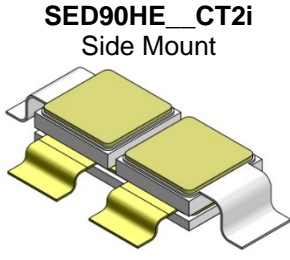
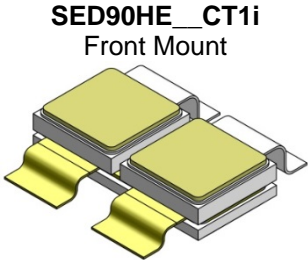
**FEATURES:**  
 Optimized for 2.1V and 3.3V output power supplies. The SUPER SCHOTTKY series has been designed to provide ultra low forward voltage drops at low operating temperatures of 75°C.

- Low V<sub>F</sub>, typically 380mV (per leg) at 75°C
- Low reverse leakage
- Surface mountable
- Guard ring for overvoltage protection and ruggedness
- Eutectic die attach
- 125°C operating temperature
- Hermetic isolated version (Hot case versions available – contact factory)
- Smaller footprint than TO-25X packages
- Weight: 0.95 g typ
- TX, TXV, and Space level screening available<sup>2/</sup>

Typical applications include parallel switching power supplies, converters, battery protection circuits, and redundant power subsystems.

MAXIMUM RATINGS (per leg)	Symbol	Value	Units
Peak Repetitive Reverse Voltage and DC Blocking Voltage	SED90HE25 SED90HE35 V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	25 35	Volts
Average Rectified Forward Current (Resistive load, 60 Hz, sine wave, T <sub>C</sub> = 75°C)	I <sub>O</sub>	45	Amps
Peak Surge Current (8.3 ms pulse, half sine wave superimposed on I <sub>O</sub> , allow junction to reach equilibrium between pulses, T <sub>A</sub> = 25°C)	I <sub>FSM</sub>	350	Amps
Operating and Storage Temperature	T <sub>OP</sub> & T <sub>stg</sub>	-55 to +125	°C
Maximum Thermal Resistance (Junction to Case)	R <sub>θJC</sub>	1.55	°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.



**Physical Properties:**  
 Body: Alumina  
 Lead: Copper, Ag plated with Ni under-plate  
 Bottom Isolation: AlN DBCu, Tin-Lead finish with Nickel under-plate

**Key:**  
 White = Anode  
 Yellow = Cathode



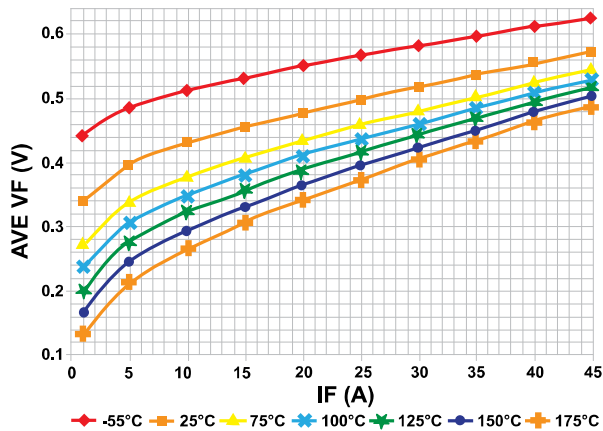
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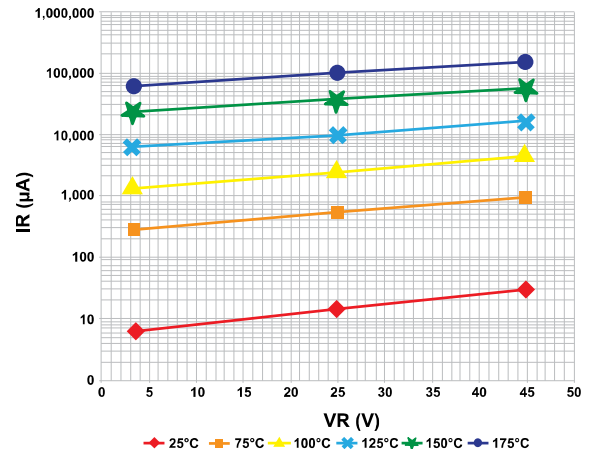
# SED90HE25CT1i and SED90HE35CT1i Series

ELECTRICAL CHARACTERISTICS (per leg)	Symbol	Typical	Maximum	Unit
<b>Instantaneous Forward Voltage Drop</b> ( $T_J = 25^\circ\text{C}$ , 300 - 500 $\mu\text{sec}$ pulse)	$I_F = 10 A_{DC}$ $V_{F1a}$	0.43	0.45	$V_{DC}$
	$I_F = 20 A_{DC}$ $V_{F1b}$	0.48	0.52	
	$I_F = 35 A_{DC}$ $V_{F1c}$	0.54	-	
	$I_F = 45 A_{DC}$ $V_{F1d}$	0.57	0.70	
<b>Instantaneous Forward Voltage Drop</b> ( $T_J = 75^\circ\text{C}$ , 300 - 500 $\mu\text{sec}$ pulse)	$I_F = 10 A_{DC}$ $V_{F2a}$	0.38	0.42	$V_{DC}$
	$I_F = 20 A_{DC}$ $V_{F2b}$	0.43	-	
	$I_F = 35 A_{DC}$ $V_{F2c}$	0.50	-	
	$I_F = 45 A_{DC}$ $V_{F2d}$	0.55	-	
<b>Instantaneous Forward Voltage Drop</b> ( $T_J = 100^\circ\text{C}$ , 300 - 500 $\mu\text{sec}$ pulse)	$I_F = 10 A_{DC}$ $V_{F3a}$	0.35	-	$V_{DC}$
	$I_F = 20 A_{DC}$ $V_{F3b}$	0.41	-	
	$I_F = 35 A_{DC}$ $V_{F3c}$	0.49	-	
	$I_F = 45 A_{DC}$ $V_{F3d}$	0.53	-	
<b>Instantaneous Forward Voltage Drop</b> ( $T_J = 125^\circ\text{C}$ , 300 - 500 $\mu\text{sec}$ pulse)	$I_F = 10 A_{DC}$ $V_{F4a}$	0.32	-	$V_{DC}$
	$I_F = 20 A_{DC}$ $V_{F4b}$	0.39	0.45	
	$I_F = 35 A_{DC}$ $V_{F4c}$	0.47	-	
	$I_F = 45 A_{DC}$ $V_{F4d}$	0.52	0.65	
<b>Instantaneous Forward Voltage Drop</b> ( $T_J = -55^\circ\text{C}$ , 300 - 500 $\mu\text{sec}$ pulse)	$I_F = 10 A_{DC}$ $V_{F6a}$	0.51	-	$V_{DC}$
	$I_F = 20 A_{DC}$ $V_{F6b}$	0.55	-	
	$I_F = 35 A_{DC}$ $V_{F6c}$	0.60	-	
	$I_F = 45 A_{DC}$ $V_{F6d}$	0.63	-	
<b>Reverse Leakage Current</b> ( $T_J = 25^\circ\text{C}$ , 300 $\mu\text{sec}$ pulse minimum)	$V_R = 3.3V_{DC}$ $I_{R1a}$	6.5	25	$\mu\text{A}$
	$V_R = 25V_{DC}$ $I_{R1b}$	15	100	
	$V_R = 35V_{DC}$ $I_{R1c}$	25	100	
<b>Reverse Leakage Current</b> ( $T_J = 75^\circ\text{C}$ , 300 $\mu\text{sec}$ pulse minimum)	$V_R = 3.3V_{DC}$ $I_{R2a}$	0.3	1	$\text{mA}$
	$V_R = 25V_{DC}$ $I_{R2b}$	0.55	5	
	$V_R = 35V_{DC}$ $I_{R2c}$	0.9	5	
<b>Reverse Leakage Current</b> ( $T_J = 100^\circ\text{C}$ , 300 $\mu\text{sec}$ pulse minimum)	$V_R = 3.3V_{DC}$ $I_{R3a}$	1.5	-	$\text{mA}$
	$V_R = 25V_{DC}$ $I_{R3b}$	2.5	-	
	$V_R = 35V_{DC}$ $I_{R3c}$	4.0	-	
<b>Reverse Leakage Current</b> ( $T_J = 125^\circ\text{C}$ , 300 $\mu\text{sec}$ pulse minimum)	$V_R = 3.3V_{DC}$ $I_{R4a}$	6.5	20	$\text{mA}$
	$V_R = 25V_{DC}$ $I_{R4b}$	10	100	
	$V_R = 35V_{DC}$ $I_{R4c}$	15	100	
<b>Junction Capacitance</b> ( $T_J = 25^\circ\text{C}$ , $f = 1 \text{ MHz}$ )	$V_R = 5V_{DC}$ $C_{J1}$	3000	3750	$\text{pF}$
	$V_R = 10V_{DC}$ $C_{J2}$	1450	-	

SED90HE35CT Series  
per leg



SED90HE35CT Series  
per leg



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

**DATA SHEET #: SH0109A**

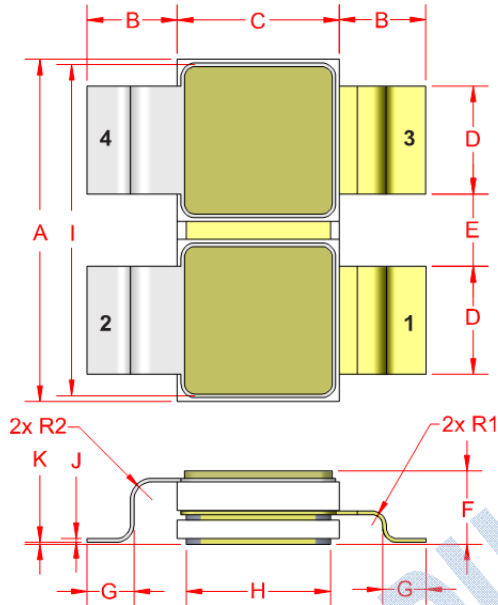
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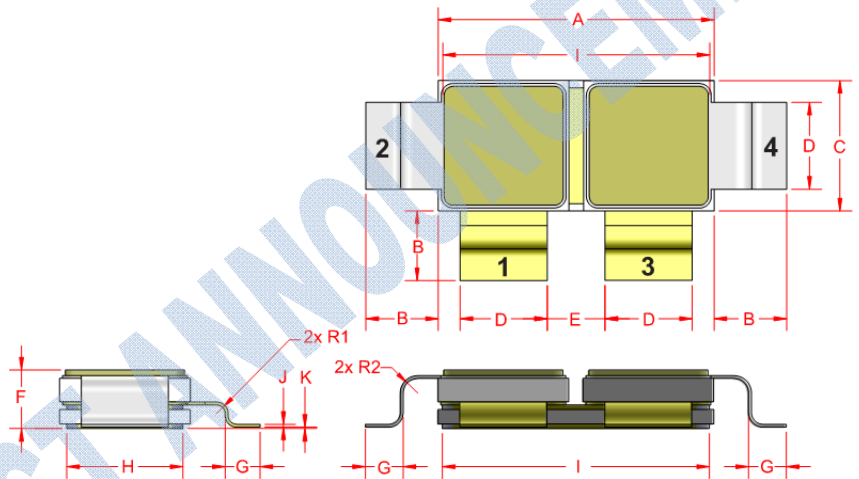
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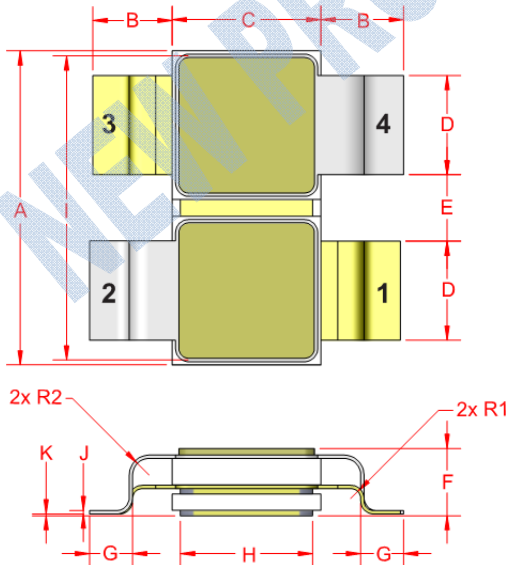
**CASE OUTLINE: SED90HE35CT1i**  
Front Mount



**CASE OUTLINE: SED90HE35CT2i**  
Side Mount



**CASE OUTLINE: SED90HE35CT3i**  
Split Mount



DIMENSIONS			
DIM	MIN	MAX	
A	0.465	0.560	
B	0.125	0.145	
C	0.200	0.235	
D	0.140	0.160	
E	0.090	0.110	
F	-	0.135	
G	0.055	0.075	
H	0.200	0.210	
I (bottom Cu pad)	0.450	0.460	
J	0.005	0.008	
K	-0.002	0.008	
R1	R 0.015 REF		
R2	R 0.025 REF		
<b>PIN ASSIGNMENT</b> 			
<b>Configuration</b>	<b>Pin 1 &amp; Pin 3 (tied together)</b>	<b>Pin 2</b>	<b>Pin 4</b>
Common Cathode (CT)	Cathode	Anode	Anode

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