

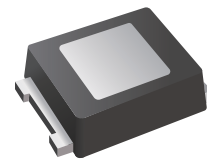


RHE5AL THRU RHE5JL

Surface Mount Superfast Recovery Rectifier

Features

- Top-side Cooling(TSC) Packaging technology
- Compact and Slim Packaging Solutions
- Superfast reverse recovery time
- For surface mounted applications
- Low reverse leakage
- High forward surge current capability
- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Meets MSL level 1, per J-STD-020
- Lead free in comply with EU RoHS 2011/65/EU directives



Mechanical Data

- Case: SMHL
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end

Ordering Information

Part Number	Shipping	Reel
RHE5AL THR RHE5JL	7500PCS Tape&Reel	13 inches

Maximum Ratings and Electrical Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter	Symbol	RHE5AL	RHE5BL	RHE5CL	RHE5DL	RHE5EL	RHE5GL	RHE5JL	Unit
	Marking	E5A	E5B	E5C	E5D	E5E	E5G	E5J	
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	50	100	150	200	300	400	600	V
Maximum RMS voltage	V _{RMS}	35	70	105	140	210	280	420	V
Maximum DC Blocking Voltage	V _{DC}	50	100	150	200	300	400	600	V
Maximum Average Forward Rectified Current @ Fig.1	I _{F(AV)}	5							A
Peak Forward Surge Current,8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I _{FSM}	120							A
Max Instantaneous Forward Voltage at 5A	V _F	1				1.25		1.68	V
Maximum DC Reverse Current T _a = 25 °C at Rated DC Reverse Voltage T _a = 125 °C	I _R	1 100							μA
Typical Junction Capacitance (Note1)	C _j	128				80		50	pF
Maximum Reverse Recovery Time (Note2)	t _{rr}	35							ns
Typical Thermal Resistance (Note3)	R _{θJA} R _{θJC}	45 4							°C/W
Operating and Storage Temperature Range	T _J , T _{stg}	-55 to +150							°C

Note: (1) Measured at 1 MHz and applied reverse voltage of 4 V D.C

(2) Measured with $I_F = 0.5\text{ A}$, $I_R = 1\text{ A}$, $t_r = 0.25\text{ A}$.

(3) PCB mounted with 0.2" X 0.2" (5.0mm X 5.0 mm) copper pad areas.



Characteristics Curves

Fig.1 Forward Current Derating Curve

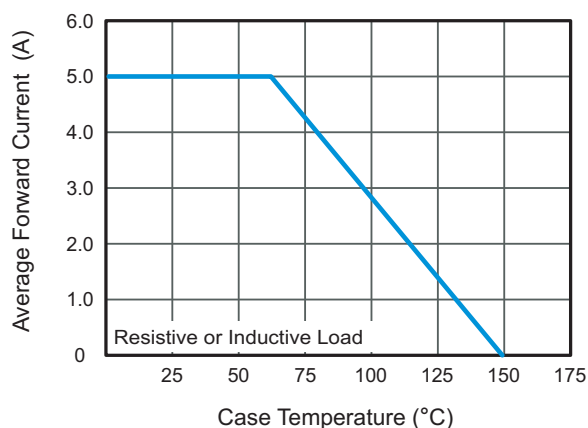


Fig.2 Typical Reverse Characteristics

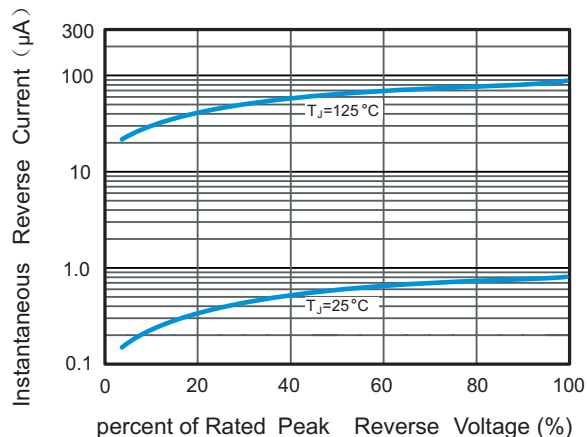


Fig.3 Typical Forward Characteristics

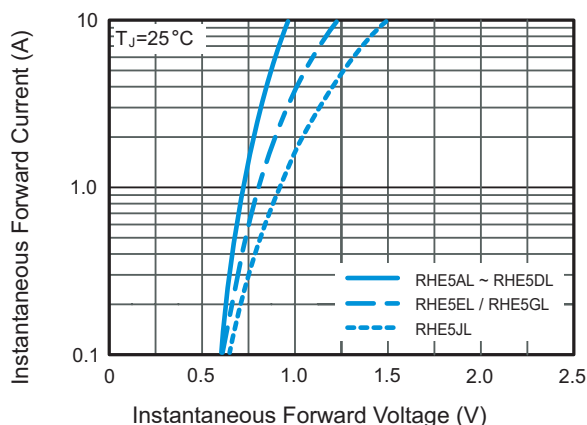


Fig.4 Typical Junction Capacitance

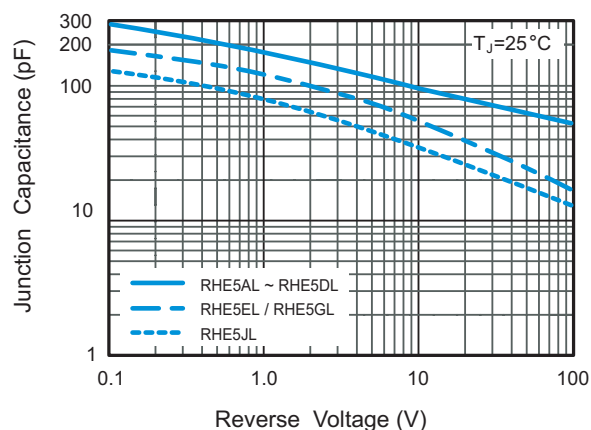
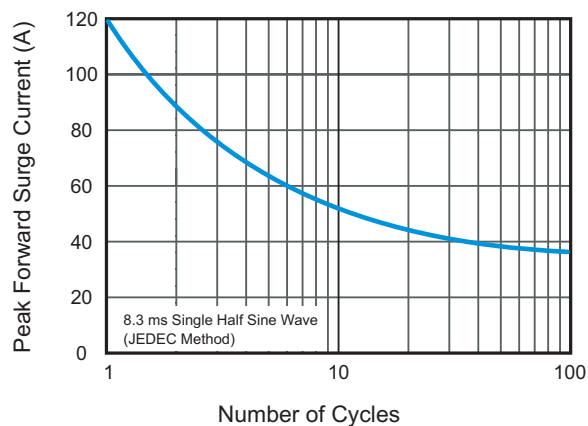


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current



**SMHL**

The technical drawing illustrates a rectangular plate with three views:

- Top View:** Shows the plate's footprint with overall dimensions D (width) and E (height). It features a central square hole with side length f . The distance from the hole's edge to the plate's outer edge is e . The plate has a raised flange on the left and right sides.
- Bottom View:** Shows the underside of the plate with a width dimension d and a small horizontal offset h on the right side.
- Front view:** Shows the plate's profile with a total height A and a base height C . The total length is H_E . The top edge is rounded, indicated by the note $\angle$ ALL ROUND.

UNIT		A	C	D	E	H _E	d	e	f	h	∠
mm	max	1.00	0.25	4.60	3.80	5.30	2.90	2.90	2.95	0.60	6°
	min	0.90	0.15	4.20	3.40	4.70	2.70	2.70	2.75	0.40	

SMHL

1. Controlling dimension:in millimeters.
2. General tolerance:±0.05mm
3. The pad layout is for reference purpose only.

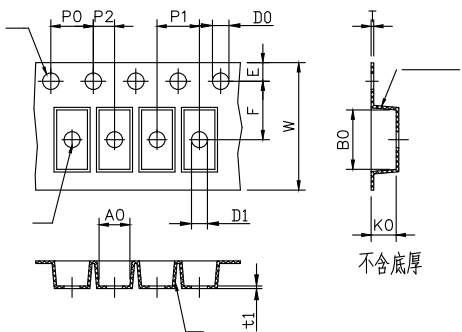


RHE5AL THRU RHE5JL

Surface Mount Superfast Recovery Rectifier

Carrier Tape Dimensions

Unit : mm



Symbol	Spec	Symbol	Spec
W	12.0±0.10	P2	2.00±0.10
E	1.75±0.10	t	0.25±0.03
F	5.50±0.10	t1	0.05+
D0	1.55±0.10	A0	3.85±0.10
D1	1.50±0.10	B0	5.35±0.10
P0	4.00±0.10	K0	1.20±0.10
P1	8.00±0.10		

Reel Dimensions

Unit : mm

13" Reel

D5	Φ330.0±5.0
D6	Φ13.5±0.5
H	2.3±0.2
T	1.95±0.5
W2	12±2.0
Quantity: 7500PCS	

Packaging

SMHL

7500PCS/Reel

5Reel/Inner Box
37.5KPCS/Inner Box

Dim(Unit:mm)
340mm*340mm*85mm

Dim(Unit:mm)
360mm*360mm*355mm

4 Boxes per carton
150KPCS per carton

13 inches Reel



Recommended Soldering Conditions



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T _L to T _P)	3°C/second max.
Preheat	
-Temperature Min (T _{S min})	150°C
-Temperature Max (T _{S max})	200°C
-Time (min to max) (t _s)	60-180 seconds
T _{S max} to T _L	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T _L)	217°C
-Time (t _L)	60-150 seconds
Peak Temperature (T _P)	260°C
Time within 5°C of actual Peak Temperature (t _p)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.