



RHR3AL THRU RHR3ML

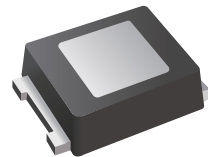
Surface Mount Fast Recovery Rectifiers

Features

- Top-side Cooling(TSC) Packaging technology
- Compact and Slim Packaging Solutions
- For surface mounted applications
- Fast reverse recovery time
- Lead free in comply with EU RoHS 2011/65/EU directives

Mechanical Data

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



Ordering Information

Part Number	Shipping	Reel
RHR3AL THRU RHR3ML	6000PCS Tape&Reel	13 inchs

Absolute Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

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

Parameter	Symbol	RHR3AL	RHR3BL	RHR3DL	RHR3GL	RHR3JL	RHR3KL	RHR3ML	Unit
	Marking	R3A	R3B	R3D	R3G	R3J	R3K	R3M	
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V _{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V _{DC}	50	100	200	400	600	800	1000	V
Maximum average forward rectified current	I _{F(AV)}	3							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I _{FSM}	100							A
Maximum instantaneous forward voltage at 3.0A	V _F	1.3							V
Maximum DC reverse current T _A =25°C at rated DC reverse voltage T _A =100°C	I _R	1 100							μA
Typical junction capacitance (Note1)	C _j	32							pF
Maximum reverse recovery time (Note2)	t _{rr}	150				250	500		ns
Typical thermal resistance (Note3)	R _{θJA}	34							°C/W
	R _{θJC}	6							
Operating and StorageTemperature 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 $I_F = 0.5 A$, $I_R = 1 A$, $t_{rr} = 0.25 A$.

(3) P.C.B. mounted with 0.08" × 0.08"(2mm × 2mm) copper pad areas.



Characteristics Curves

Fig.1 Maximum Average Forward Current Rating

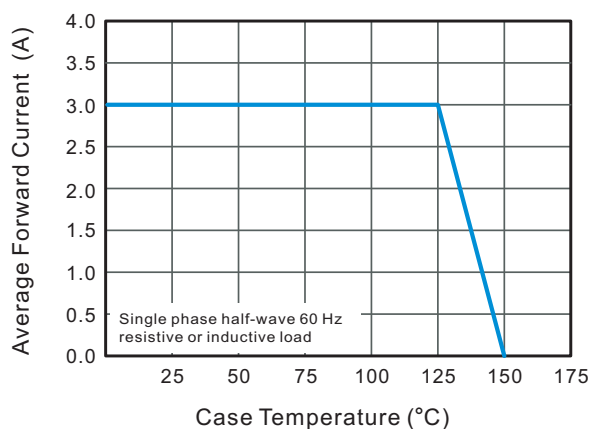


Fig.2 Typical Reverse Characteristics

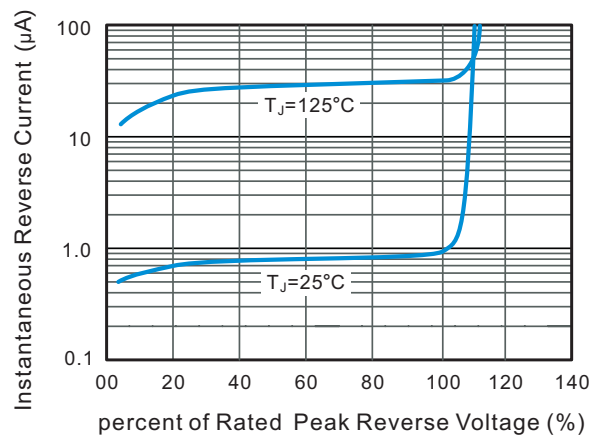


Fig.3 Typical Instantaneous Forward Characteristics

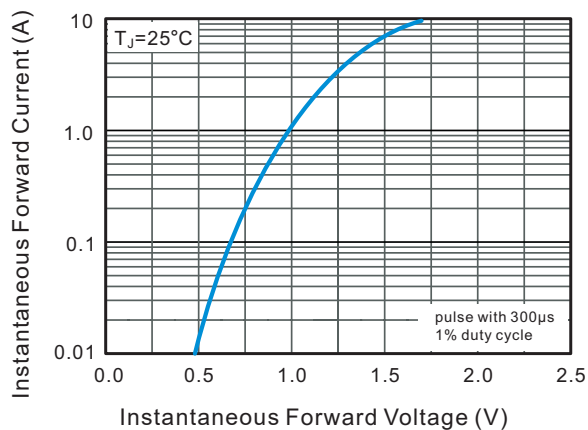


Fig.4 Typical Junction Capacitance

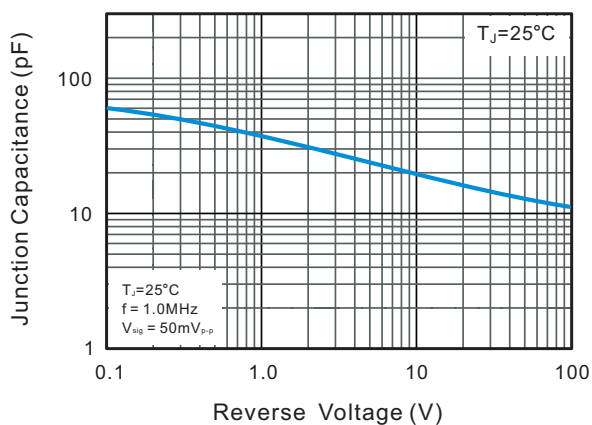
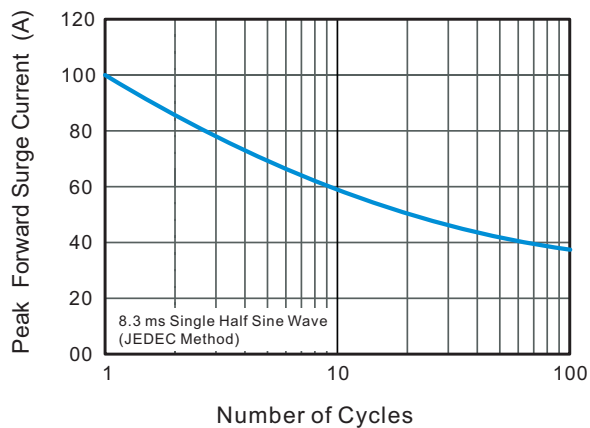


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

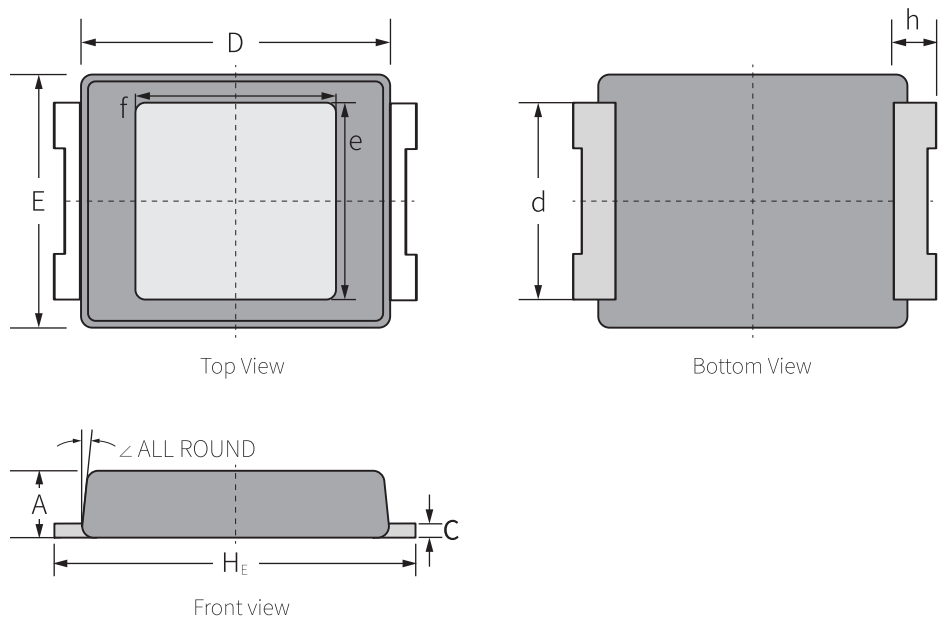




Package Outline

SMHL

Unit : mm

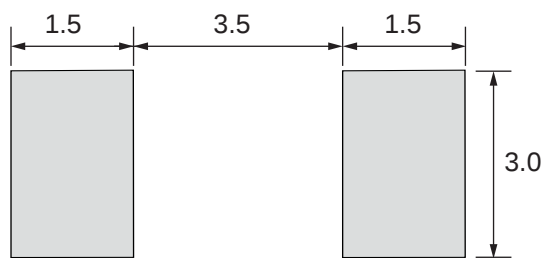


UNIT		A	C	D	E	H _E	d	e	f	h	∠
mm	max	1.00	0.25	4.60	3.80	5.30	2.90	2.90	2.95	0.60	6°
	min	0.90	0.15	4.20	3.40	4.70	2.70	2.70	2.75	0.40	

Suggested Pad Layout

SMHL

Unit : mm



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



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Carrier Tape Dimensions

Unit : mm

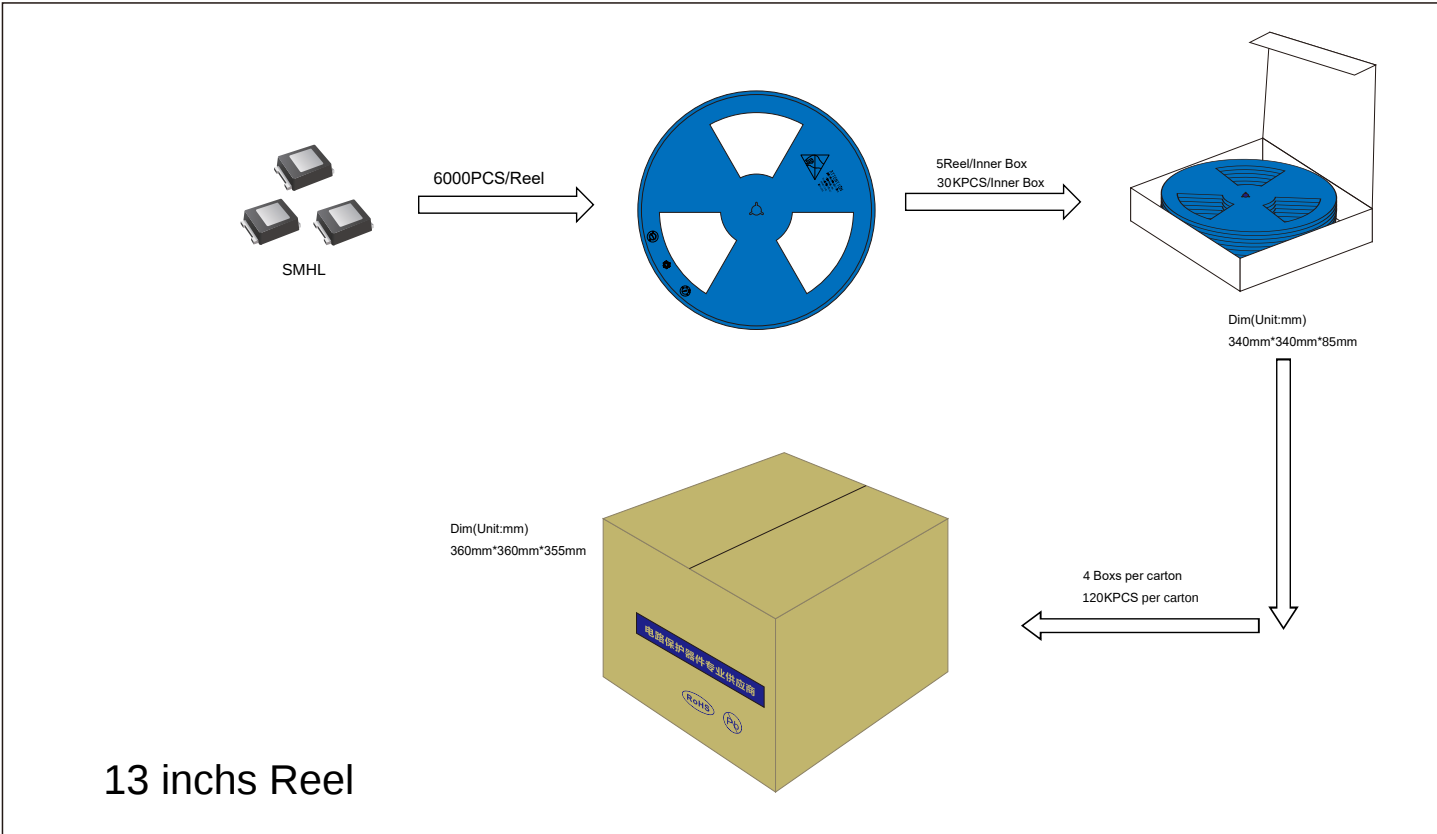
Symbol	Spec	Symbol	Spec
W	12.0±0.10	P2	2.00±0.10
E	1.75±0.10	t	0.25±0.03
F	5.50±0.10	t1	0.05+
D0	1.55±0.10	A0	3.85±0.10
D1	1.50±0.10	B0	5.35±0.10
P0	4.00±0.10	K0	1.20±0.10
P1	8.00±0.10		

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: 6000PCS	

Packaging





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 ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_s)	150°C 200°C 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	3°C/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	217°C 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.