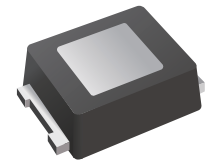
RHE1AS THRU RHE1JS

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: SMHS
- Terminal:Leads solderable per MIL-STD-750 Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any

Ordering Information

Part Number	Shipping	Reel
RHE1AS THR RHE1JS	15000PCS Tape&Reel	13 inchs

Maximum Ratings and Electrical Characteristics

Ratings at 25℃ ambient temperature unless otherwise specified.
Single phase half-wave 60Hz,resistive or inductive load,for capacitive load current derate by 20%.

Parameter	Symbol	RHE1AS	RHE1BS	RHE1CS	RHE1DS	RHE1ES	RHE1GS	RHE1JS	Unit
	Marking	E1A	E1B	E1C	E1D	E1E	E1G	E1J	
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 at T_L=55℃	$I_{(AV)}$	1							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	30							A
Maximum instantaneous forward voltage at 1A	V_F	1				1.25		1.68	V
Maximum DC reverse current T_A=25℃ at rated DC blocking voltage T_A=100℃	I_R	1 100							μA
Maximum reverse recovery time (Note1)	T_{RR}	35							ns
Typical Junction Capacitance (Note2)	C_J	15							pF
Typical thermal resistance (Note3)	$R_{\theta JA}$ $R_{\theta JC}$	63 7							°C/W
Operating junction and storage temperature range	T_J,T_{STG}	-55 to +150							℃

Note:(1) Reverse recovery condition I_F=0.5A,I_R=1.0A,I_{rr}=0.25A.
(2) Measured at 1MHz and applied reverse voltage of 4.0V D.C.
(3) P.C.B. mounted with 0.08" × 0.08"(2mm x 2mm) copper pad areas.

Characteristics Curves

FIG. 1 FORWARD CURRENT DERATING CURVE

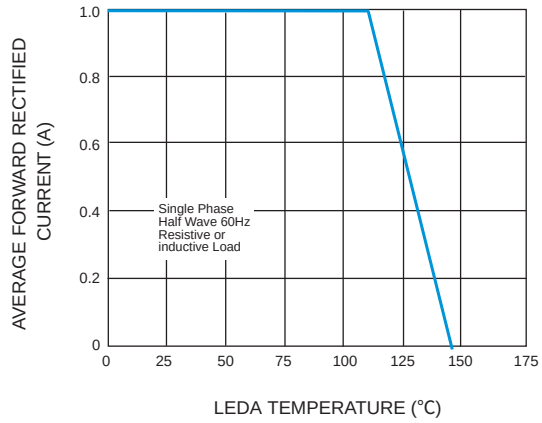


FIG. 2 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

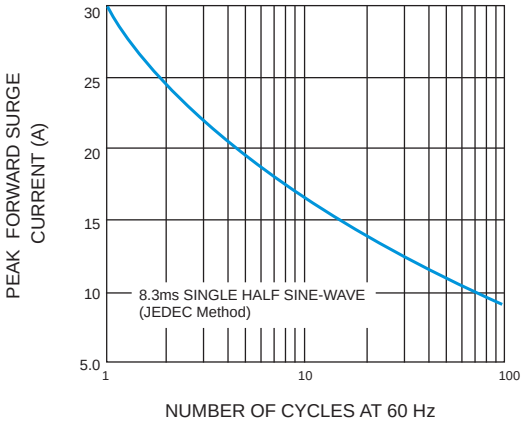


FIG. 3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

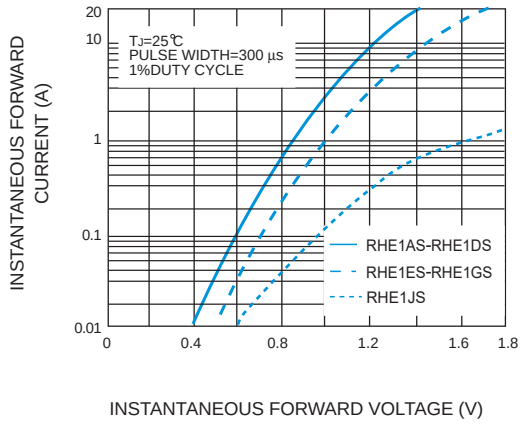


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

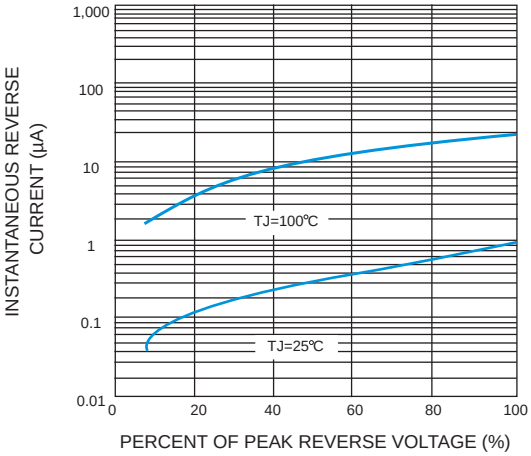
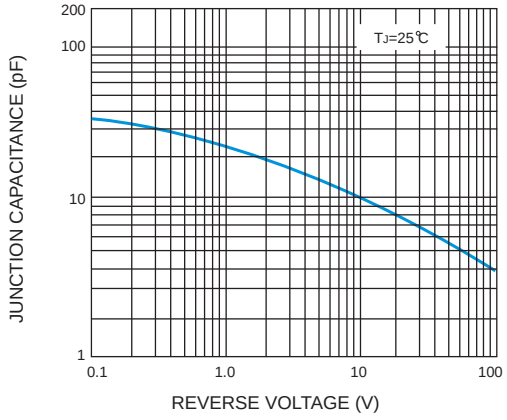


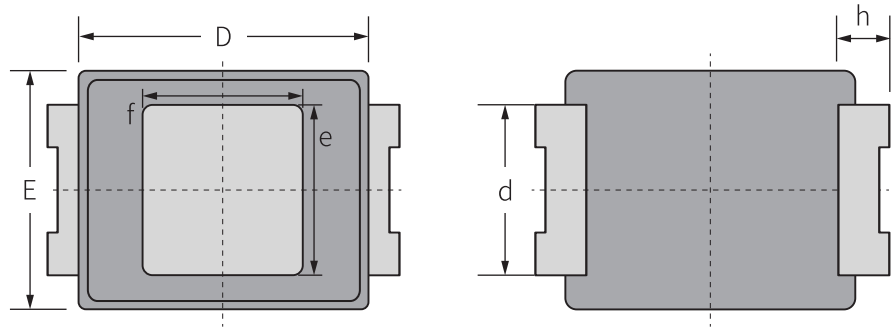
FIG. 5 TYPICAL JUNCTION CAPACITANCE

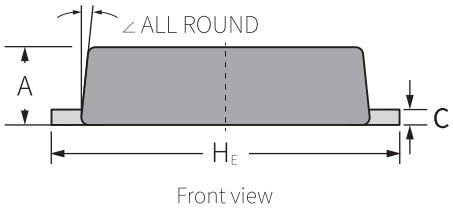


Package Outline

SMHS

Unit：mm



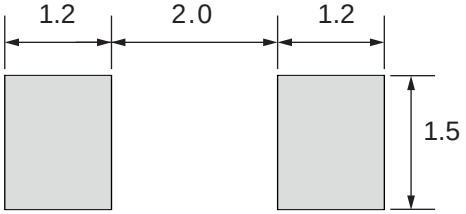


UNIT		A	C	D	E	H_E	d	e	f	h	∠
mm	max	0.99	0.25	2.90	2.10	3.50	1.30	1.30	1.25	0.70	6°
	min	0.83	0.15	2.50	1.70	2.90	1.10	1.10	1.05	0.50	

Suggested Pad Layout

SMHS

Unit：mm

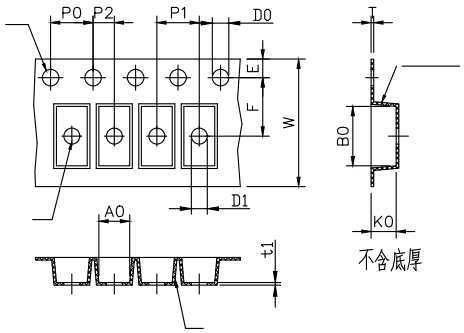


Note:

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

Carrier Tape Dimensions

Unit：mm

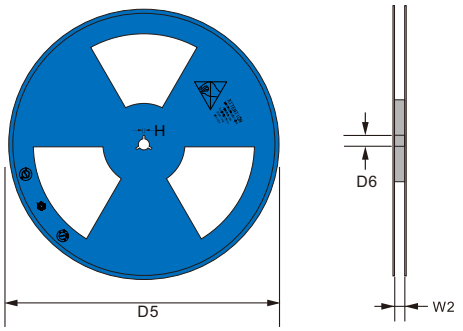


Symbol	Spec	Symbol	Spec
W	8.00±0.10	P2	2.00±0.10
E	1.75±0.10	t	0.22±0.02
F	3.50±0.10	t1	Min. 0.05
D0	1.55±0.10	A0	2.15±0.10
D1	1.05±0.10	B0	3.40±0.10
P0	4.00±0.10	K0	1.15±0.10
P1	4.00±0.10		

Reel Dimensions

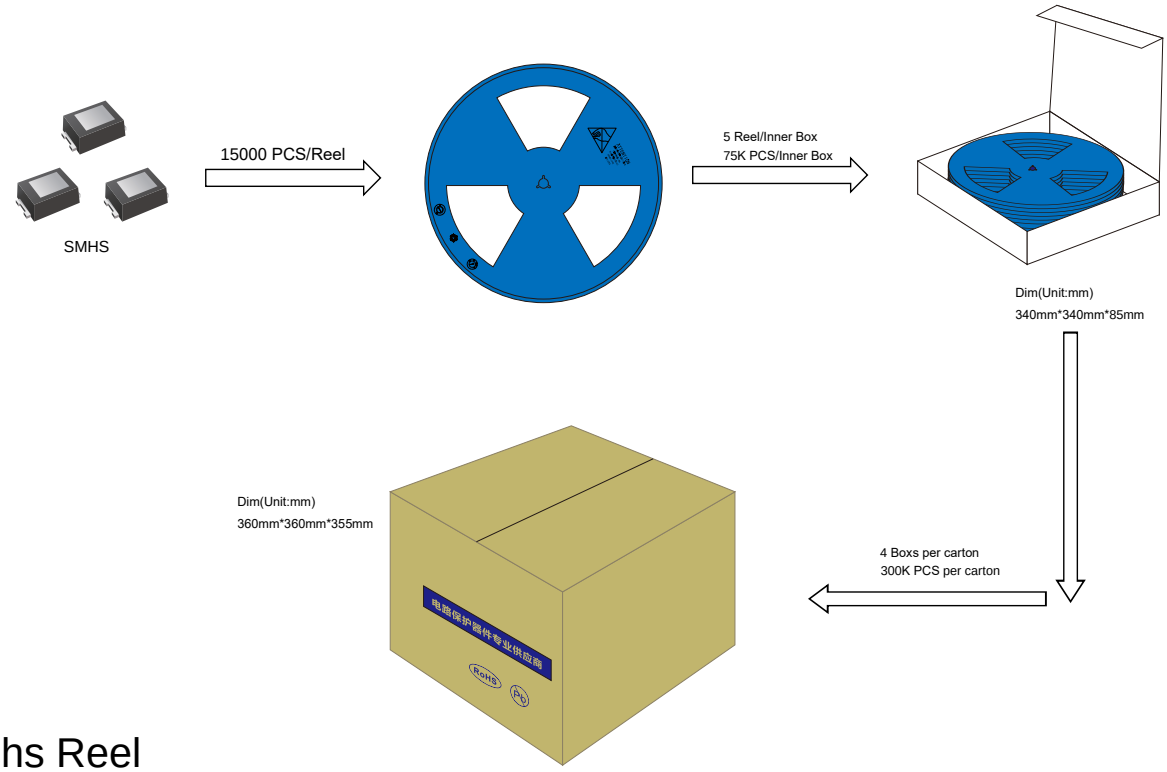
Unit：mm

13” Reel



D5	Φ330.0±5.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±2.0
Quantity: 15000PCS	

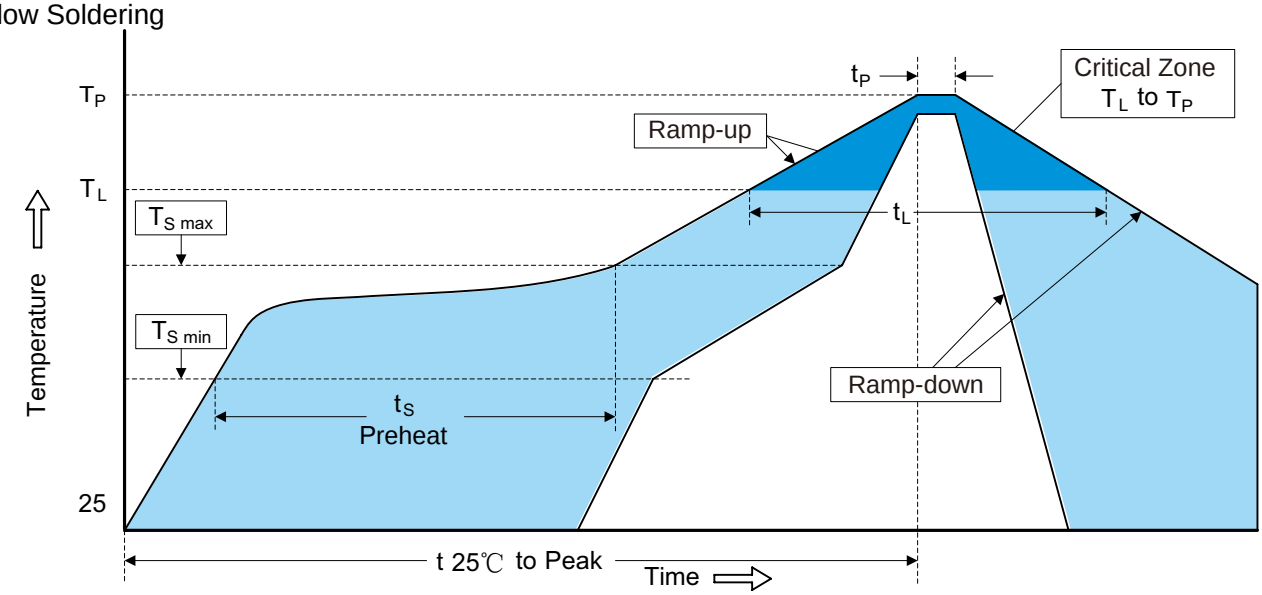
Packaging



13 inchs Reel

Recommended Soldering Conditions

Reflow Soldering



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3℃/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_S)	 150℃ 200℃ 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	 3℃/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	 217℃ 60-150 seconds
Peak Temperature (T_P)	260℃
Time within 5℃ of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max.