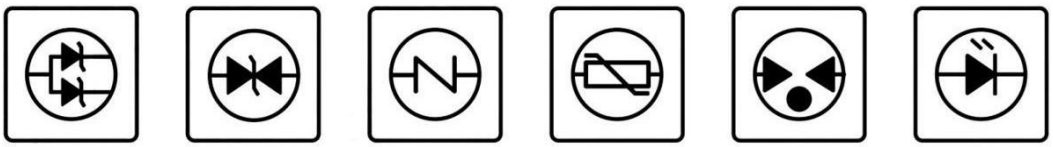
MSKSEMI 美森科
SEMICONDUCTOR



ESD05V14T-MS

Product specification

Features

- 350 W Peak Power per Line (tp = 8/20μs)
- SOT-143 package
- ESD Protection > 15 kV
- Unidirectional configurations
- Protects 2 I/O Ports & Power Supply
- Low clamping voltage
- RoHS Compliant in Lead-Free Versions
- Transient protection for data lines to IEC 61000-4-2(ESD) ±15KV(air) ±8KV(contact); IEC 61000-4-4 (EFT) 40A (5/50ns)

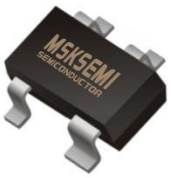
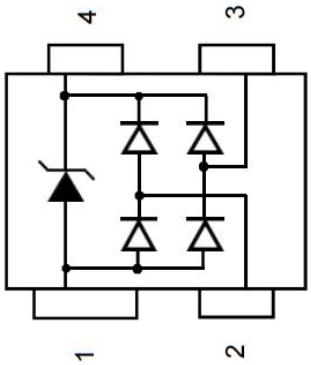
Applicati

- Ethernet - 10/100 Base T
- Fire wire
- Wireless communications
- USB interface

Mechanical Characteristics

- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:260C
- Device meets MSL 1 requirements
- Pure tin plating: 7 ~ 17 um
- Pin flatness:≤3mil

Reference News

PACKAGE OUTLINE	Pin Configuration	Marking
		WR1**

Electrical Characteristics(TA=25°C unless otherwise specified)

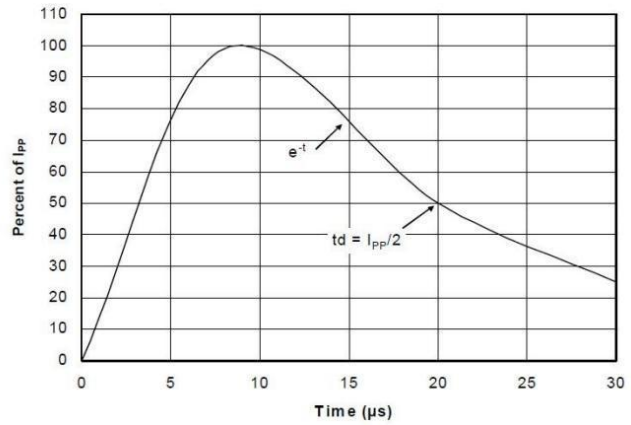
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	I_t = 1mA	6		8.5	V
Reverse Leakage Current	I_R	V_{RWM} =5.0V, T=25℃			1	μA
Clamping Voltage	V_C	I_{PP} = 1A, t_P = 8/20μs			12.5	V
Clamping Voltage	V_C	I_{PP}=5A, t_P = 8/20μs			24.0	V
Capacitance Between IO and GND	C_J	V_R=0V, f = 1MHz		3.0		pF
Capacitance Between IO and I/O	C_J	V_R=0V, f = 1MHz		1.5		pF

Absolute maximum rating@25℃

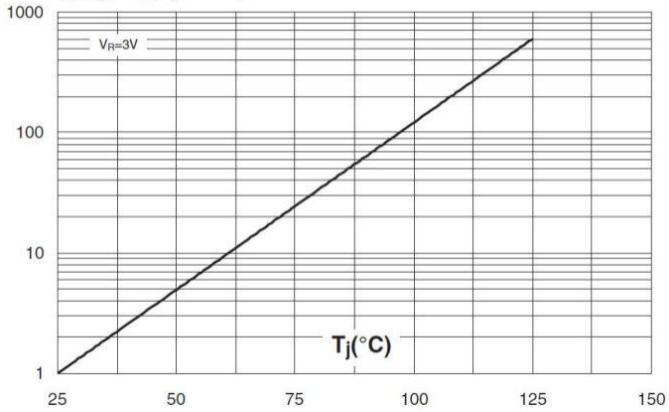
Rating	Symbol	Value	Units
Peak Pulse Power (t_p=8/20μs)	P_{pp}	350	W
Peak Pulse Power (t_p=8/20μs)	I_{pp}	9	A
Operating Temperature	T_J	-55 to + 150	℃
Storage Temperature	T_{STG}	-55 to + 150	℃

Typical Characteristics@ Ta=25℃ unless otherwise specified

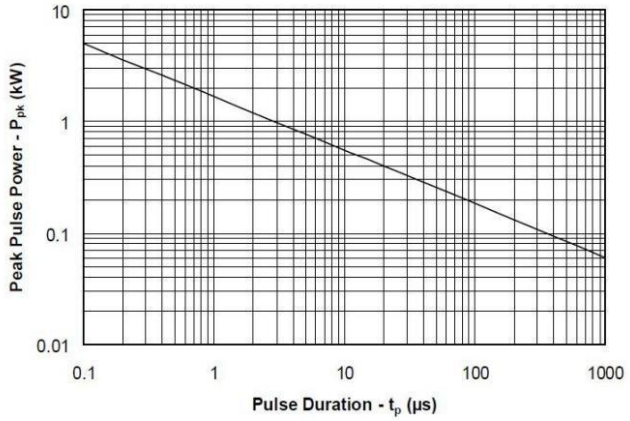
Pulse Waveform



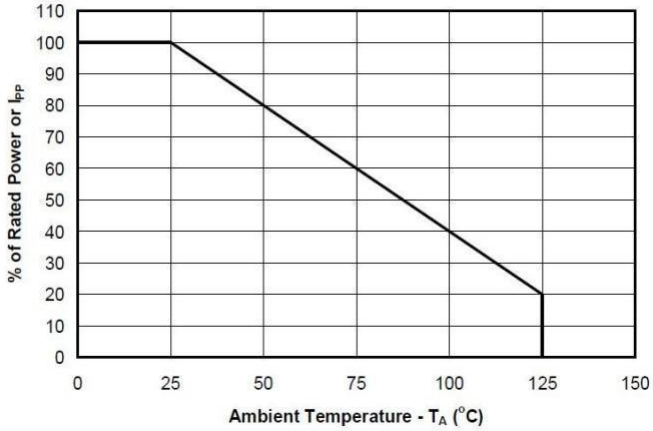
$I_R[T_j]$ / $I_R[T_j=25°C]$



Non-Repetitive Peak Pulse Power vs. Pulse Time

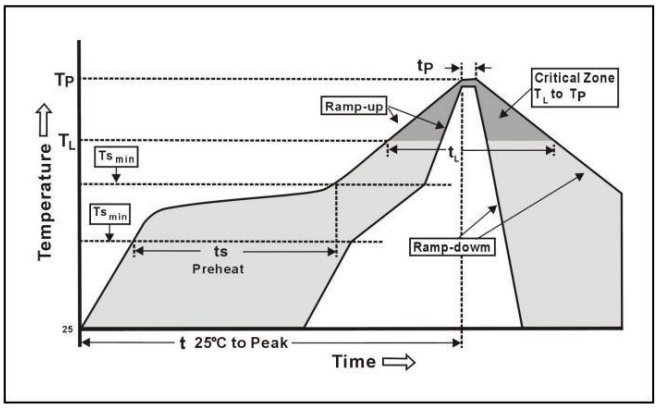


Power Derating Curve

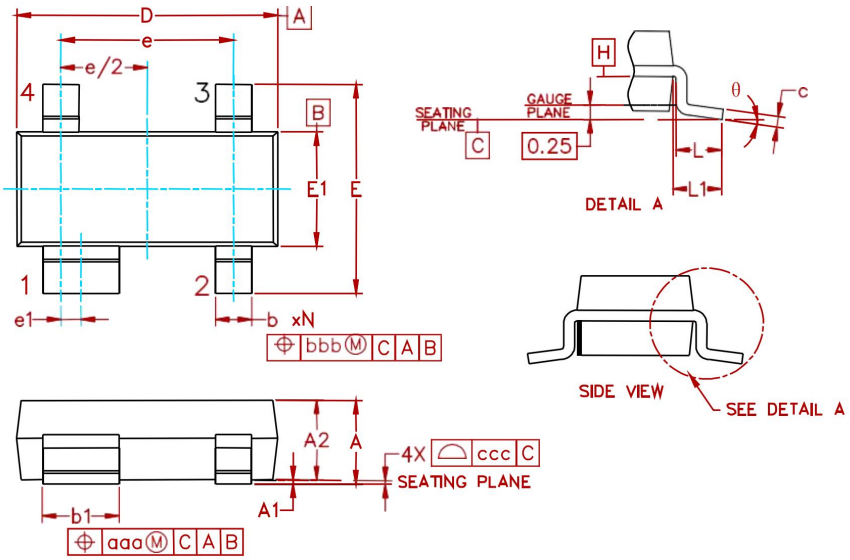


SolderingParameters

Reflow Condition		Fb – Free assembly
Pre Heat	-Temperature Min ($T_{s(Min)}$)	150°C
	-Temperature Max ($T_{s(Max)}$)	200°C
	-Time (Min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus) Temp (T_L) to peak		3°C/second Max
$T_{S(Max)}$ to T_L - Ramp-up Rate		3°C/second Max
Reflow	-Temperature (T_L) (Liquidus)	217°C
	-Temperature (t_L)	60 – 150 seconds
Peak Temperature (T_P)		250$^{+0/-5}$ °C
Time within 5°C of actual peak Temperature (t_P)		20 – 40 seconds
Ramp-dowm Rate		6°C/second Max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		260°C

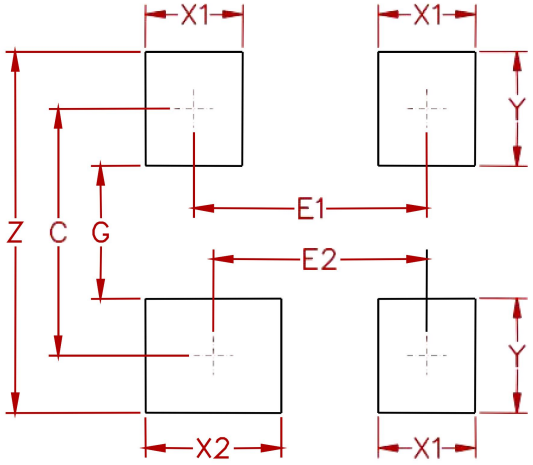


PACKAGE MECHANICAL DATA



Symbol	Inches			Millimeters		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.031	-	0.048	0.80	-	1.22
A1	0.000	-	0.008	0.013	-	0. 15
A2	0.020	0.035	0.042	0.75	0.90	1.07
b	0.011	-	0.020	0.30	-	0.51
b1	0.029	-	0.037	0.76	-	0.94
c	0.003	-	0.008	0.08	-	0.20
D	0. 110	0. 114	0. 120	2.80	2.90	3.04
E	0.082	0.093	0. 104	2. 10	2.37	2.64
E1	0.047	0.051	0.055	1.20	1.30	1.40
e	0.075			1.92 BSC		
e1	0.008			0.20 BSC		
L	0.015	0.020	0.024	0.40	0.50	0.60
L1	(0.021)			(0.54)		
N	4			4		
θ	0°	-	8°	0°	-	8°
aaa	0.006			0. 15		
bbb	0.008			0.20		
ccc	0.004			0. 10		

Suggested Pad Layout



Note:

1.Controlling dimension:in millimeters.

2.General tolerance:±0.05mm.

3.The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
ESD05V14T-MS	SOT-143	3000

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