

# MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

## ESD05V14T-LC-MS

### Product specification

## FEATURES

- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test Air discharge:  $\pm 15\text{kV}$
  - Contact discharge:  $\pm 8\text{kV}$
  - – IEC61000-4-4 (EFT) 40A (5/50ns)
  - – IEC61000-4-5 (Lightning) 3A (8/20 $\mu\text{s}$ ) RoHS Compliant

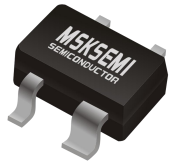
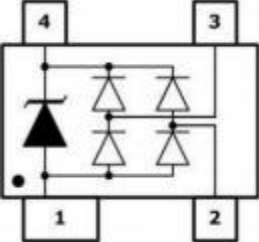

## MACHANICAL DATA

- SOT-143 package
- Flammability Rating: UL 94V-0
- Packaging: Tape and Reel
- High temperature soldering guaranteed: 260°C/10s
- Reel size: 7 inch

## APPLICATIONS

- USB 2.0 power and data line
- Set-top box and digital TV
- Digitalvideointerface (DVI)
- Notebook Computers
- SIM Ports
- 10/ 100 Ethernet

## Reference News

PACKAGE OUTLINE	PIN CONFIGURATION	Marking
		
SOT-143		

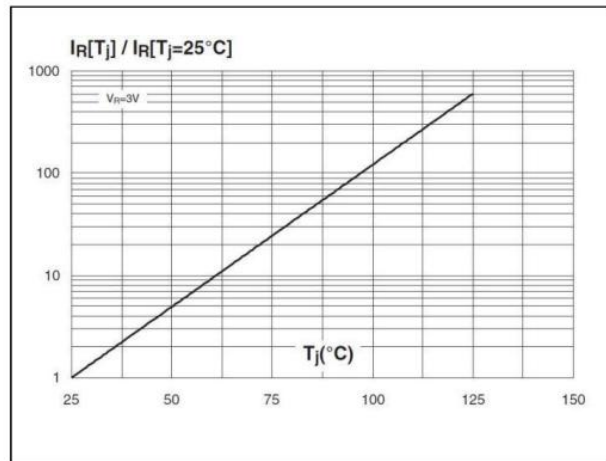
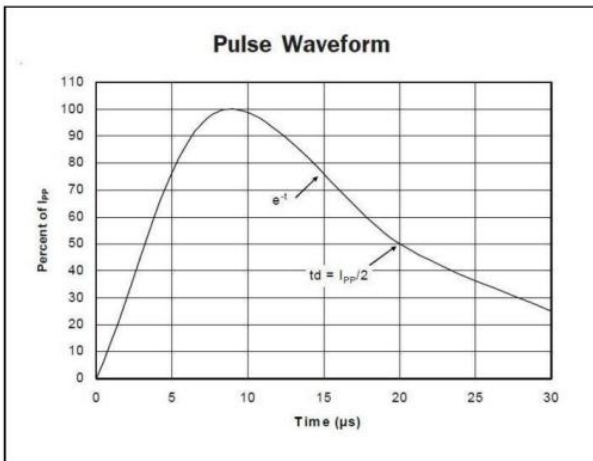
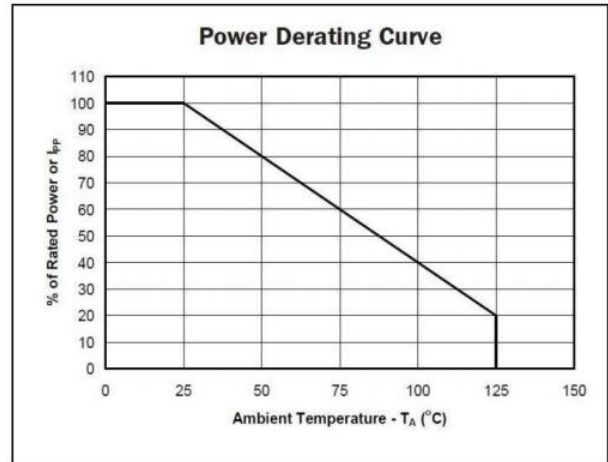
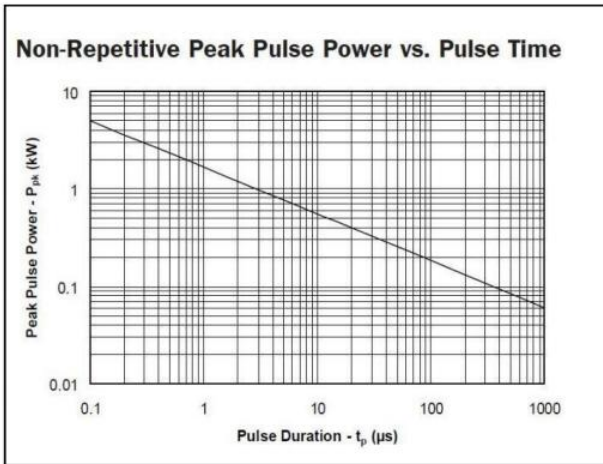
**ABSOLUTE MAXIMUM RATING**

Symbol	Parameter	Value	Units
P <sub>pp</sub>	Peak Pulse Power (8/20μs)	150	W
V <sub>ESD</sub>	ESD per IEC 61000-4-2 (Air)	±15	Kv
V <sub>ESD</sub>	ESD per IEC 61000-4-2 (Contact)	±8	Kv
T <sub>J</sub>	Operating Temperature Range	-55 to + 125	°C
T <sub>STJ</sub>	Storage Temperature Range	-55 to + 150	°C

**ELECTRICAL CHARACTERISTICS (T<sub>amb</sub>=25 °C)**

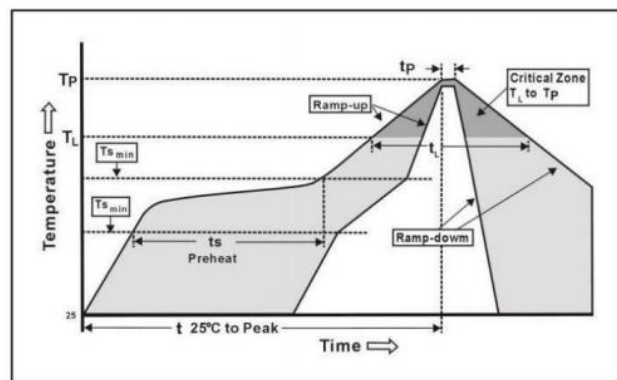
Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V <sub>RWM</sub>	Reverse Working Voltage				5.0	V
V <sub>BR</sub>	Reverse Breakdown Voltage	I <sub>T</sub> = 1mA	6.0			V
I <sub>R</sub>	Reverse Leakage Current	V <sub>RWM</sub> = 5V			100	nA
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20μs			9.8	V
		I <sub>PP</sub> = 5 A, t <sub>p</sub> = 8/20μs			15	V
C <sub>J</sub>	Junction Capacitance	V <sub>R</sub> = 0V, f = 1MHz		1.2		pF

**ELECTRICAL CHARACTERISTICS CURVE**

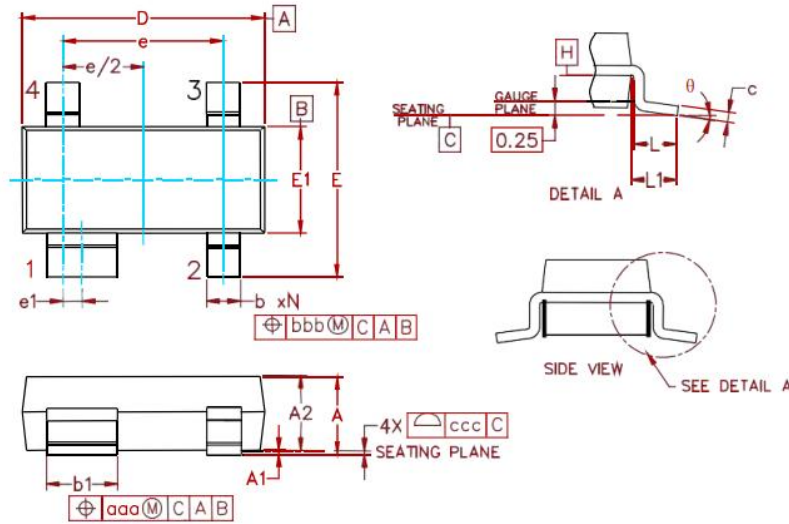


**Soldering Parameters**

Reflow Condition		Fb – Free assembly
Pre Heat	- Temperature Min ( $T_{s(\text{Min})}$ )	150°C
	- Temperature Max ( $T_{s(\text{Max})}$ )	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
$T_{s(\text{Max})}$ 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 <sup>+0/-5</sup> °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 ( $T_p$ )		8 minutes Max.
Do not exceed		260°C

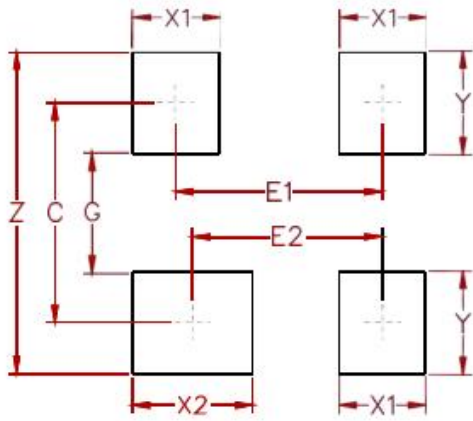


**PACKAGE MECHANICAL DATA**



Symbol	Inches			Millimeters		
	Min.	Nom.	Max.	Min.	Nom.	Max.
<b>A</b>	0.031	-	0.048	0.80	-	1.22
<b>A1</b>	0.000	-	0.008	0.013	-	0.15
<b>A2</b>	0.020	0.035	0.042	0.75	0.90	1.07
<b>b</b>	0.011	-	0.020	0.30	-	0.51
<b>b1</b>	0.029	-	0.037	0.76	-	0.94
<b>c</b>	0.003	-	0.008	0.08	-	0.20
<b>D</b>	0.110	0.114	0.120	2.80	2.90	3.04
<b>E</b>	0.082	0.093	0.104	2.10	2.37	2.64
<b>E1</b>	0.047	0.051	0.055	1.20	1.30	1.40
<b>e</b>	0.075			1.92 BSC		
<b>e1</b>	0.008			0.20 BSC		
<b>L</b>	0.015	0.020	0.024	0.40	0.50	0.60
<b>L1</b>	(0.021)			(0.54)		
<b>N</b>	4			4		
<b>θ</b>	0°	-	8°	0°	-	8°
<b>aaa</b>	0.006			0.15		
<b>bbb</b>	0.008			0.20		
<b>ccc</b>	0.004			0.10		

**Suggested Pad Layout**



**REEL SPECIFICATION**

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

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