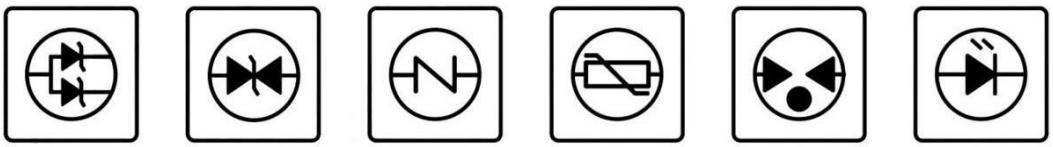
MSKSEMI 美森科
SEMICONDUCTOR



ESD7Cx.xDT5G-MS

Product specification

ESD7Cx.xDT5G-MS

Features

- Up to 2 lines protects
- Peak Pulse Current (8/20us):1.5A
- IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- Low leakage current
- Working voltages:3.3-5V
- Qualified to AEC-Q101 Standards for High Reliability
- RoHS Compliant

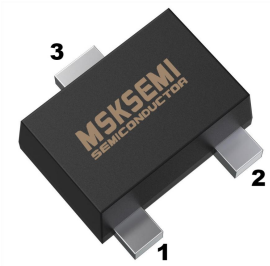
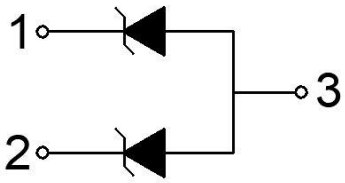
Mechanical Characteristics

- Package: SOT-723
- Lead Finish:Matte Tin
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Tape Reel :8000pcs

Applications

- Automotive Applications
- CAN Bus
- Electronic Control Units
- Body Control Units
- ADAS Control Units
- PowerTrain Control Units

Reference News

SOT-723	PIN Configuration	Marking	
		L5 ESD7C3.3DT5G-MS	L4 ESD7C5.0DT5G-MS

Order information

Orderable Device	Package	Packing Option
ESD7C3.3DT5G-MS	SOT-723	8000PCS
ESD7C5.0DT5G-MS	SOT-723	8000PCS

Absolute Maximum Ratings (T=25ºC, RH=45%-75%, unless otherwise noted)

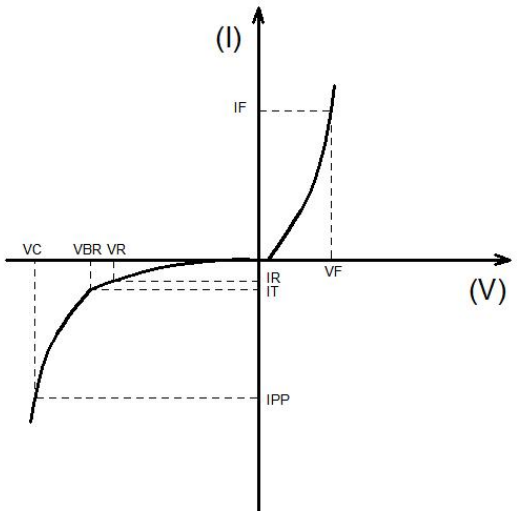
Parameters	Symbol	Value	Unit
Peak Pulse Current(8/20μs)	Ipp	1.5	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±15 ±8	KV
Thermal Resistance Junction−to−Ambient	$R_{\theta JA}$	525	℃/W
Operating Temperature Range	T_J	−55 to +150	°C
Storage Temperature Range	Tstg	−55 to +150	°C
Lead Solder Temperature − Maximum (10 Second Duration)	T_L	260	°C

Electrical Characteristics (T=25ºC, RH=45%-75%, unless otherwise noted，V_F=1.1V Max.@I_F=10mA)

Part Number	VRwm	V_{BR} @I_T	IR@VR	I_T	C_J	
	max(V)	min(V)	max (uA)	(mA)	Typ(pF)	Max(pF)
ESD7C3.3DT5G-MS	3.3	5.0	1	1.0	12	13
ESD7C5.0DT5G-MS	5.0	6.0	0.5	1.0	6.0	6.2

Typical Characteristics

FIG1：V-I cure characteristics



Symbol	Parameter
I_F	Mean Forward Current
V_F	Maximum Forward Voltage @I_F
V_R	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_R
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}

FIG2：Pulse Derating Curve

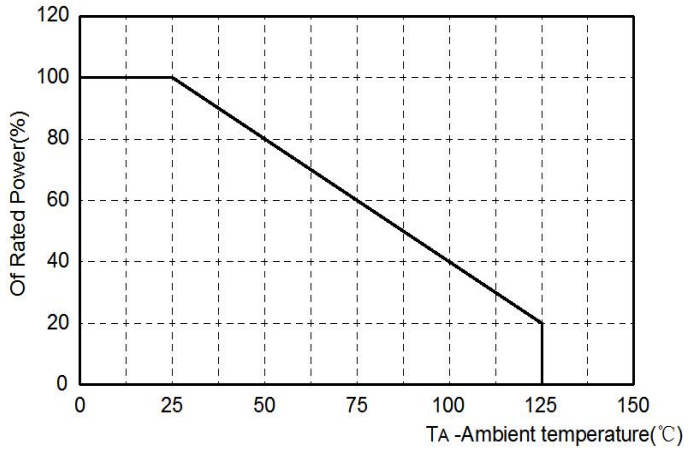
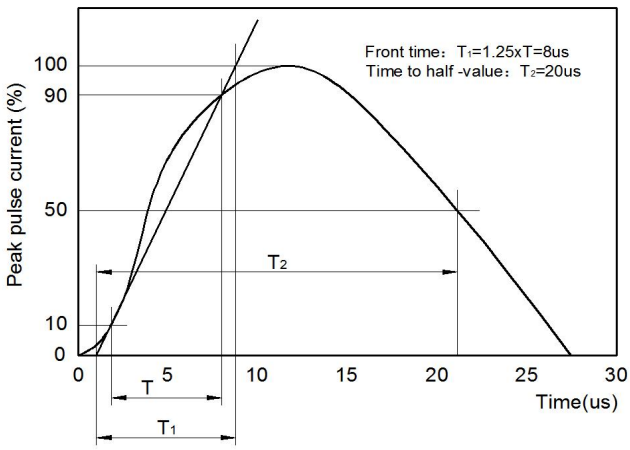
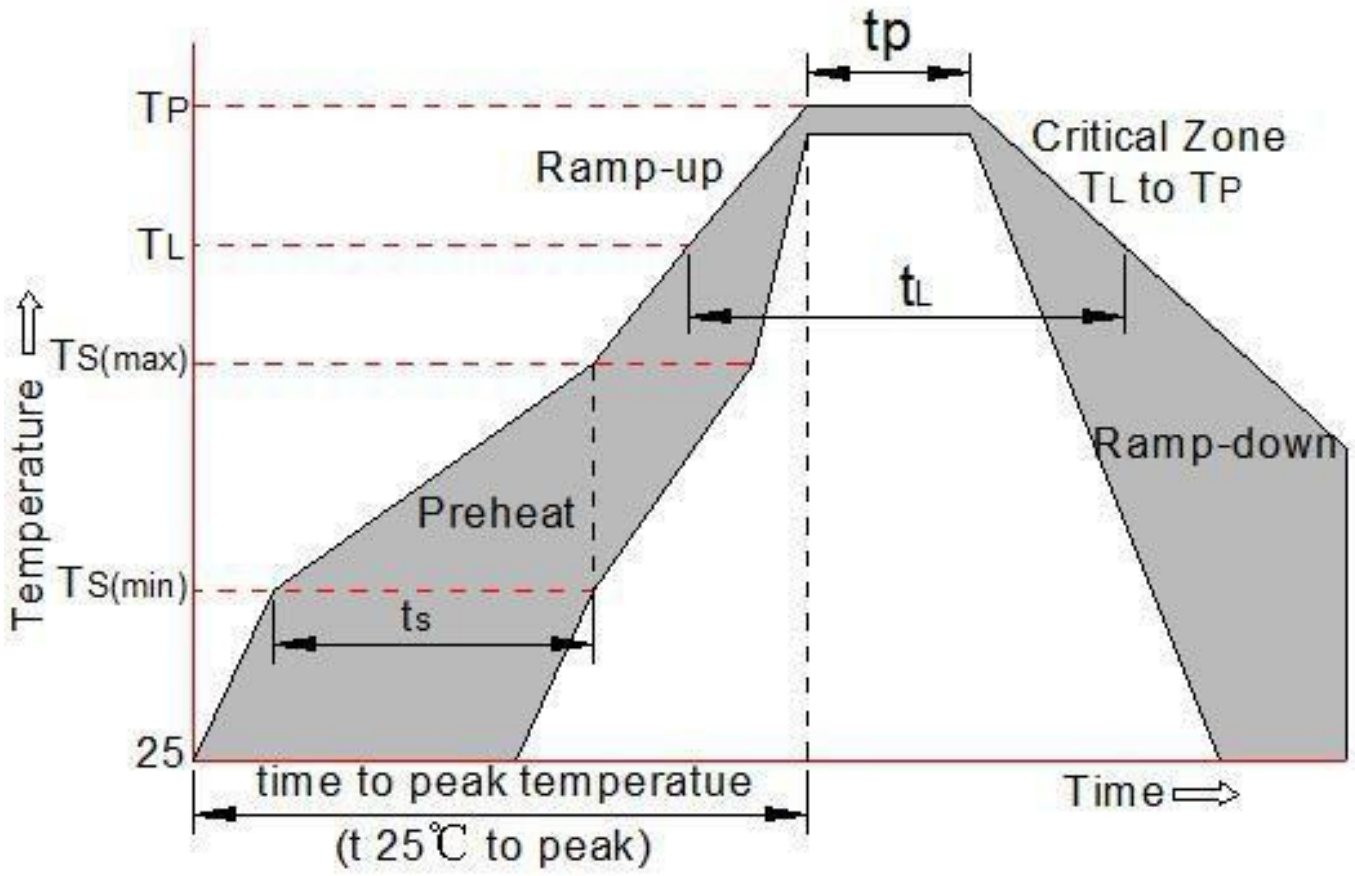


FIG3：Pulse Waveform

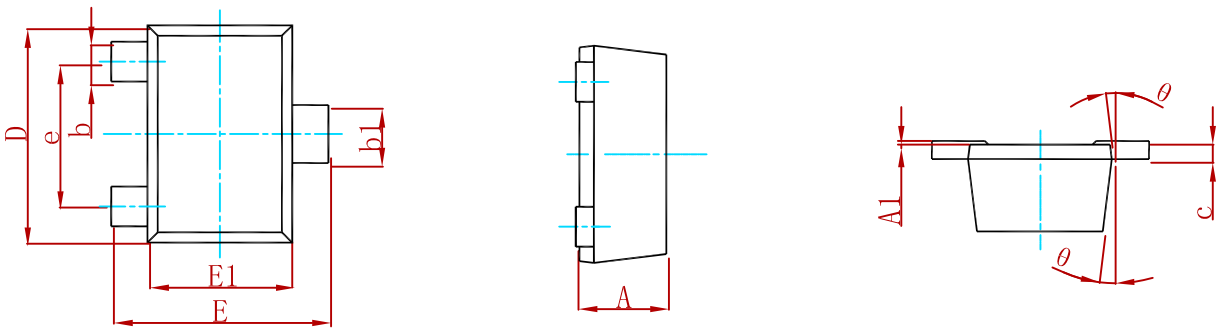


Soldering parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

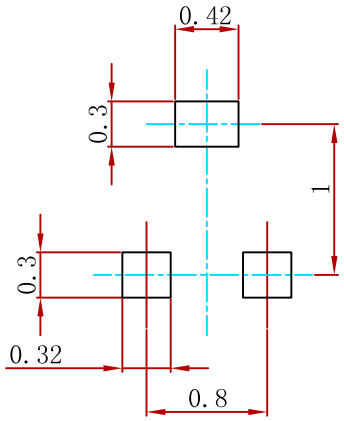


PACKAGEMECHANICALDATA



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	

Suggested Pad Layout



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

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