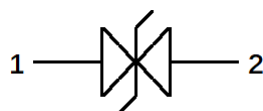


Features

- * Ultra low leakage: nA level
- * Ultra low capacitance
- * RoHS Compliant
- * REACH & SVHC Compliant
- * Halogen Compliant
- * CSP0603-2L Package

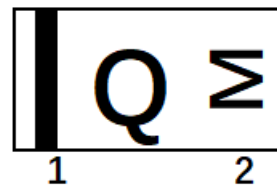
Circuit Diagram



Package and Marking diagram



CSP0603-2L



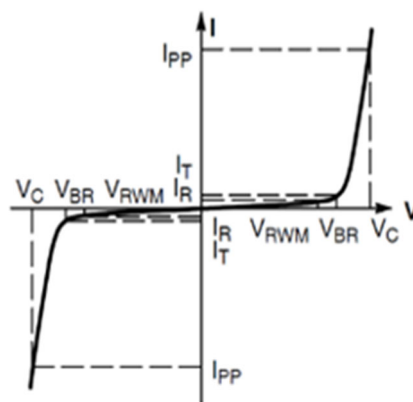
Top view

Ordering Information

Part Number	Packaging	Reel Size
ESD7381MUT5G-CN	15000/Tape & Reel	7 inch

Portion Electronics Parameter

Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}



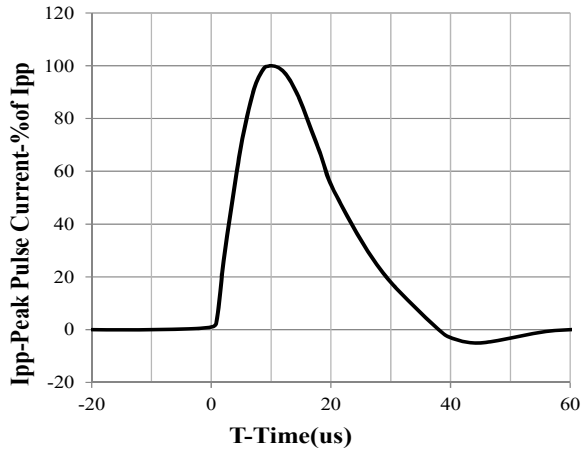
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs pulse)	P_{pk}	80	W
Peak Pulse Current (8/20 μs pulse)	I_{PP}	4	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 20	kV
ESD per IEC 61000-4-2 (Contact)		± 15	
Operating Temperature Range	T_J	-40 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^{\circ}\text{C}$

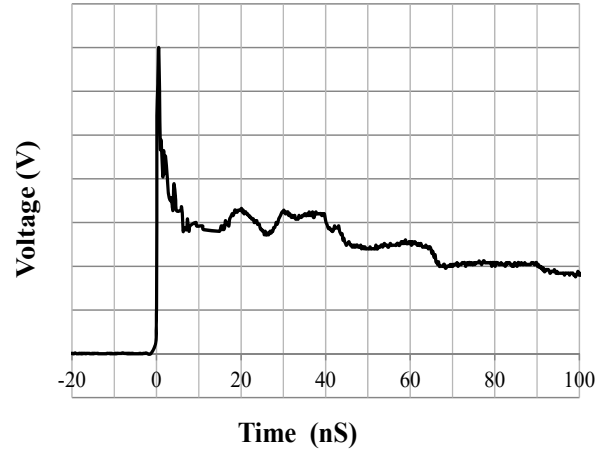
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	$I_{\text{T}} = 1\text{mA}$	6.5	8	9.5	V
Reverse Leakage Current	I_{R}	$V_{\text{RWM}} = 5\text{V}$		<10	100	nA
Clamping Voltage	V_{C}	$I_{\text{PP}} = 1\text{A}$ (8/20 μs pulse)		9.3	11	V
Clamping Voltage	V_{C}	$I_{\text{PP}} = 4\text{A}$ (8/20 μs pulse)		16	20	V
Junction Capacitance	C_{J}	$V_{\text{R}} = 0\text{V}$, $f = 1\text{MHz}$		0.3	0.5	pF

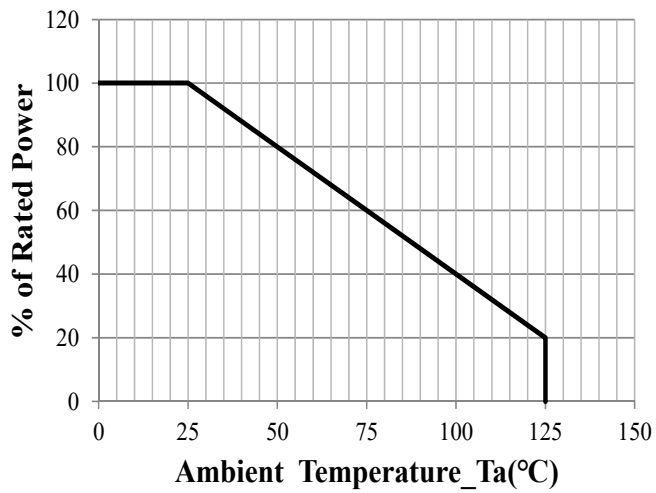
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



8 / 20us Pulse Waveform

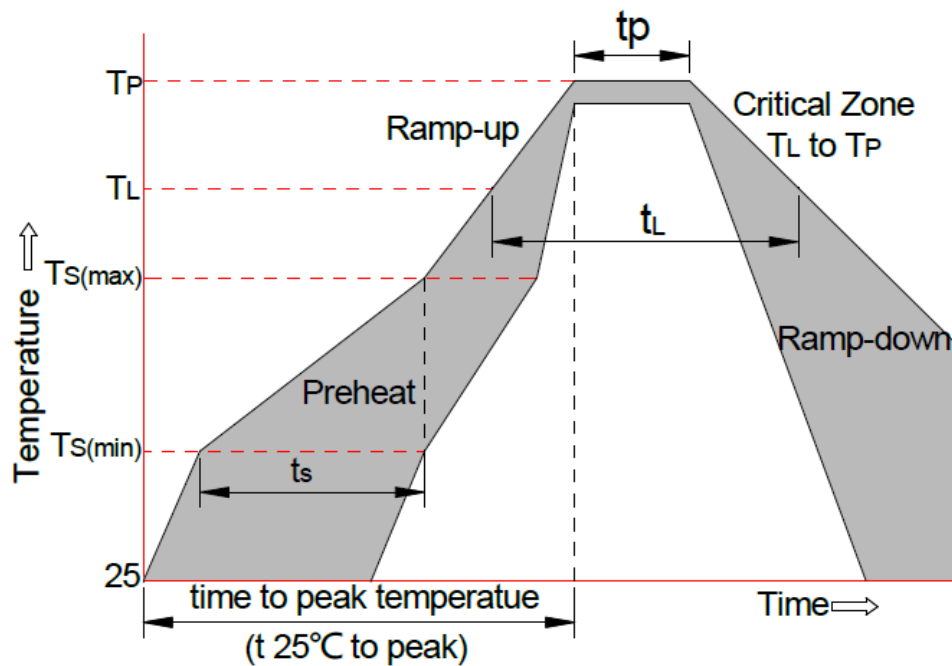


IEC61000-4-2 Pulse Waveform



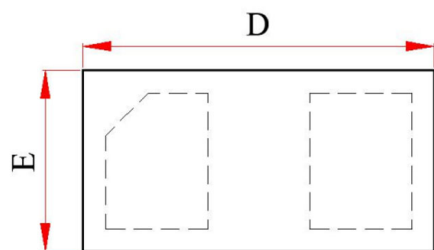
Power Derating Curve

Soldering Parameters

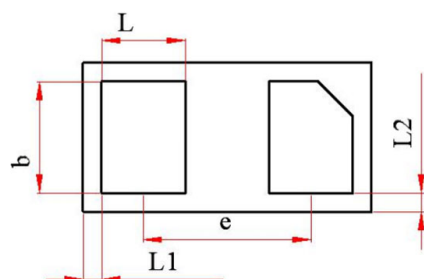


Reflow Conditions		Pb-Free Assembly
Pre-heat	-Temperature Min ($T_s (min)$)	+150°C
	-Temperature Max ($T_s (max)$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs
Average ramp up rate(Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s (max)}$ to T_L -Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature (T_L) (Liquid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

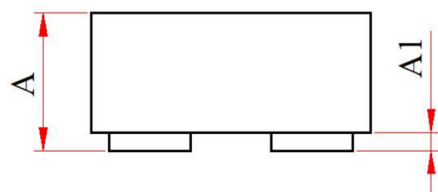
CSP0603-2L Package Outline Drawing



TOP VIEW



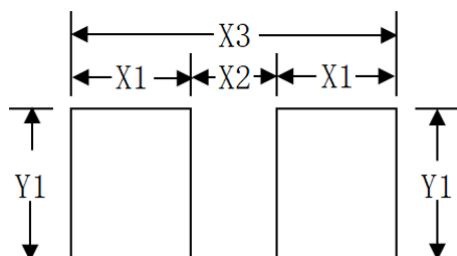
BOTTOM VIEW



SIDE VIEW

SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	Min	Typ	Max	Min	Typ	Max
A	0.280	--	0.340	0.0110	--	0.0134
A1	--	--	0.050	--	--	0.0020
D	0.590	0.620	0.640	0.0232	0.0244	0.0252
E	0.290	0.320	0.340	0.0114	0.0126	0.0134
b	0.215	0.240	0.265	0.0085	0.0094	0.0104
L	0.155	0.180	0.205	0.0061	0.0071	0.0081
L1	0.04 REF			0.0016 REF		
L2	0.04 REF			0.0016 REF		
e	0.36 BSC			0.0142 BSC		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X1	0.25	0.010
X2	0.15	0.006
X3	0.65	0.026
Y1	0.30	0.012

Note:

The land pattern is for reference purposes only.

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