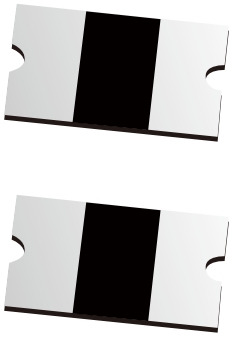
FEATURES

- I(hold): 0.03~0.50A
- Very high voltage surge capabilities
- Available in lead-free version
- Fast response to fault current
- RoHS compliant, Lead- Free and Halogen-Free
- Low resistance
- Compact design saves board space
- Compatible with high temperature solders



APPLICATIONS

- USB peripherals
- Disk drives
- CD-ROMs
- General electronics
- Set-top-box and HDMI
- Mobile Internet Device (MID)
- PDAs / digital cameras
- Game console port protection
- Plug and play protection for peripherals
- Mobile phones - battery and port protection

ENVIRONMENTAL SPECIFICATIONS

Test	Conditions	Resistance change
Passive aging	+85℃,1000 hrs	±10% typica
Humidity aging	+85℃，85%R.H.,168 hours	±5% typical
Thermal shock	+85℃ to -40℃，20times	-33% typical
Resistance to solvent	MIL-STD-202，Method 215	No change
Vibration	ML-STD-883C,Test Condition A	No change
Ambient operating conditions : - 40℃ to +85℃ Maximum surface temperature of the device in the tripped state is 125 ℃		

PERFORMANCE SPECIFICATION

Type Number	I_{hold}	I_{trip}	V_{max}	Max. Time to Trip		I_{max}	$P_{d\,max}$	Ri_{min}	$R1_{max}$
	A	A	V_{DC}	Current A	Tmax S	A	W	Ω	Ω
SMD0603-003	0.03	0.09	30.0	0.15	1.00	20	0.5	6.0	65.00
SMD0603-004	0.04	0.12	24.0	0.2	1.00	20	0.5	4.0	45.00
SMD0603-005	0.05	0.15	24.0	0.25	1.00	20	0.5	3.0	35.00
SMD0603-010	0.10	0.30	15.0	0.5	1.00	40	0.5	0.9	8.00
SMD0603-020	0.20	0.50	9.0	1.00	0.60	40	0.5	0.55	3.50
SMD0603-025	0.25	0.55	9.0	8.0	0.80	40	0.5	0.500	3.00
SMD0603-030	0.30	0.70	6.0	8.0	0.10	40	0.5	0.300	2.00
SMD0603-035	0.35	0.75	6.0	8.0	0.10	40	0.5	0.200	1.400
SMD0603-040	0.40	0.80	6.0	8.0	0.10	40	0.5	0.20	0.900
SMD0603-050	0.50	1.00	6.0	8.0	0.10	40	0.5	0.100	0.800

V_{max}= Maximum operating voltage device can withstand without damage at rated current (Imax).
I_{max}= Maximum fault current device can withstand without damage at rated voltage (V max).
I_{hold}= Hold Current. Maximum current device will not trip in 25°C still air.
I_{trip}= Trip Current. Minimum current at which the device will always trip in 25°C still air.
P_d= Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.
$Ri_{min/max}$=Minimum/Maximum device resistance prior to tripping at 25°C.
$R1_{max}$=Maximum device resistance is measured one hour post reflow.

THERMAL DERATING CHART-IH(A)

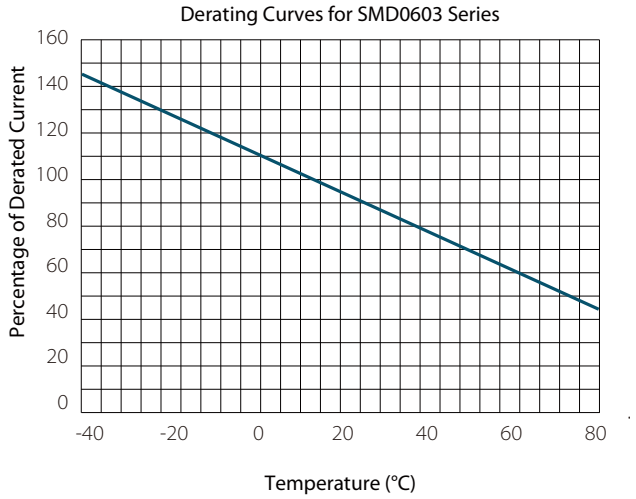
Part Number	Ambient Operation Temperature								
	-40 °C	-20 °C	0 °C	25 °C	40 °C	50 °C	60 °C	70 °C	85 °C
SMD0603-003	0.042	0.038	0.035	0.03	0.026	0.021	0.018	0.015	0.011
SMD0603-004	0.056	0.05	0.046	0.04	0.034	0.028	0.024	0.02	0.014
SMD0603-005	0.07	0.063	0.058	0.050	0.043	0.035	0.03	0.025	0.018
SMD0603-010	0.14	0.125	0.115	0.10	0.085	0.07	0.06	0.05	0.035
SMD0603-020	0.28	0.25	0.23	0.20	0.17	0.14	0.12	0.10	0.07
SMD0603-025	0.35	0.31	0.29	0.25	0.21	0.18	0.15	0.13	0.09
SMD0603-030	0.42	0.38	0.35	0.30	0.26	0.21	0.18	0.15	0.11
SMD0603-035	0.47	0.44	0.39	0.35	0.30	0.27	0.24	0.20	0.14
SMD0603-040	0.54	0.50	0.45	0.40	0.34	0.31	0.27	0.23	0.16
SMD0603-050	0.67	0.63	0.56	0.50	0.43	0.39	0.34	0.29	0.20

DIMENSIONS

Type Number	Package Dimensions (mm)							Package Dimensions (in)						
	A		B		C		D	A		B		C		D
	min	max	min	max	min	max	min	min	max	min	max	min	max	max
SMD0603-003	1.45	1.85	0.65	1.05	0.40	1.00	0.15	0.057	0.073	0.026	0.041	0.016	0.039	0.006
SMD0603-004	1.45	1.85	0.65	1.05	0.40	1.00	0.15	0.057	0.073	0.026	0.041	0.016	0.039	0.006
SMD0603-005	1.45	1.85	0.65	1.05	0.40	1.00	0.15	0.057	0.073	0.026	0.041	0.016	0.039	0.006
SMD0603-010	1.45	1.85	0.65	1.05	0.40	1.00	0.15	0.057	0.073	0.026	0.041	0.016	0.039	0.006
SMD0603-020	1.45	1.85	0.65	1.05	0.40	1.00	0.15	0.057	0.073	0.026	0.041	0.016	0.039	0.006
SMD0603-025	1.45	1.85	0.65	1.05	0.40	1.00	0.15	0.057	0.073	0.026	0.041	0.016	0.039	0.006
SMD0603-030	1.45	1.85	0.65	1.05	0.40	1.00	0.15	0.057	0.073	0.026	0.041	0.016	0.039	0.006
SMD0603-035	1.45	1.85	0.65	1.05	0.40	1.00	0.15	0.057	0.073	0.026	0.041	0.016	0.039	0.006
SMD0603-040	1.45	1.85	0.65	1.05	0.40	1.00	0.15	0.057	0.073	0.026	0.041	0.016	0.039	0.006
SMD0603-050	1.45	1.85	0.65	1.05	0.40	1.00	0.15	0.057	0.073	0.026	0.041	0.016	0.039	0.006

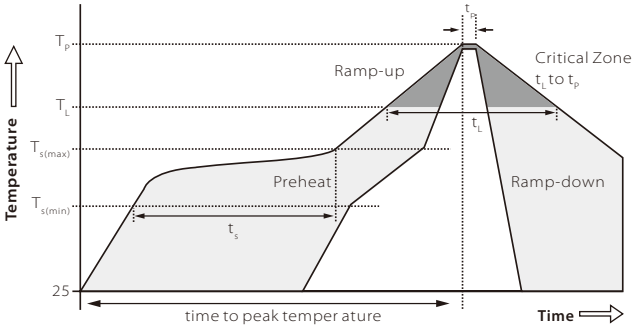
PARAMETER CHARACTERISTIC CURVE

FIG.1: Thermal Derating Curve

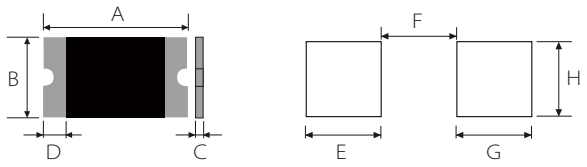


REFLOW PROFILE

Reflow Condition		Pb-Free assembly
Pre Heat	Temperature Min	150°C
	Temperature Max	200°C
	Time(min to max)	60-180 secs
Average ramp up rate (Liquidus)Temp (T_L) to peak T_S(max)to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217℃
	Temperature (T_L)	60-150 seconds
Peak Temperature (T_p)		260+0/-5 °C
Time within 5°C of actual peak Temperature (tp)		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



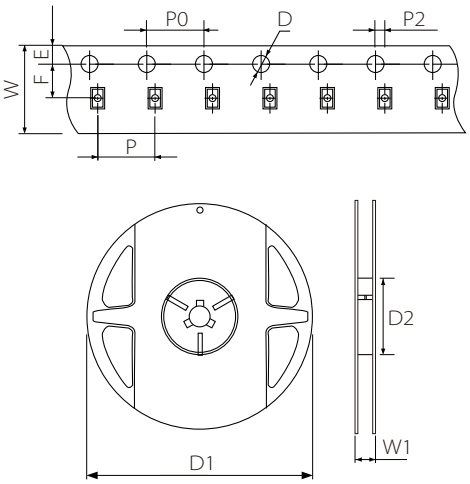
PACKAGE MECHANICAL DATA



Recommended pad layout (mm)

Ref.	Dimensions
	Millimeters
A	See Dimensions Table
B	
C	
D	
E	0.8
F	0.7
G	0.8
H	1.0

TAPING AND REEL SPECIFICATIONS



Symbol	Dimensions	
	Millimeters	Inches
W	8±0.2	0.315±0.008
P	4±0.1	0.157±0.004
P0	4±0.1	0.157±0.004
P2	2±0.05	0.079±0.002
F	3.5±0.05	0.138±0.002
E	1.75±0.1	0.069±0.004
D	1.55±0.05	0.061±0.002
D1(max)	178	7.007
D2(min)	60	2.362
W1	9.0±0.5 0	0.354±0.02

ORDERING INFORMATION

Part Number	QTY/Reel	Reel Size
SMD0603-003/004/005/010/020/025/040/050	5000PCS	7″
SMD0603-030 Thru SMD0603-035	4000PCS	7″

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