

Features

- ◆ Ultra low capacitance: 1.5pF(Max)
- ◆ Ultra low leakage: nA level
- ◆ Low operating voltage: 5.5V
- ◆ Low clamping voltage
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 16\text{kV}$
Contact discharge: $\pm 10\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ ROHS Compliant

Mechanical Characteristics

- ◆ Package: SOT143
- ◆ Lead Finish: Matte Tin
- ◆ Case Material: "Green" Molding Compound.
- ◆ UL Flammability Classification Rating 94V-0
- ◆ Moisture Sensitivity: Level 3 per J-STD-020

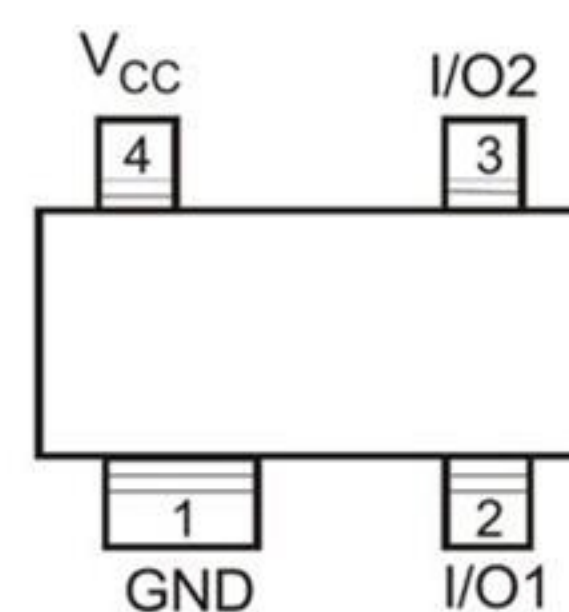
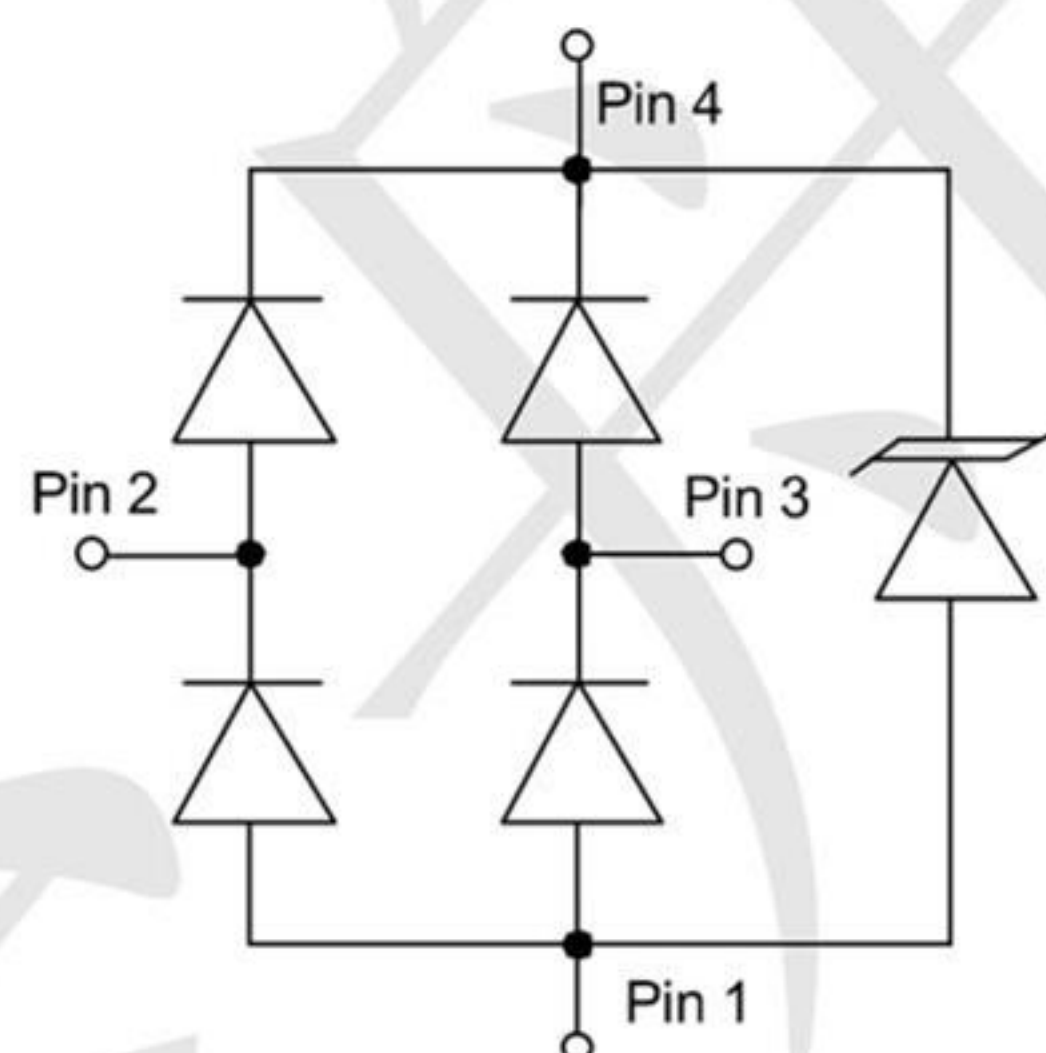
Applications

- ◆ USB 2.0 and USB 3.0 Ports
- ◆ USB OTG
- ◆ Digital video interface(DVI)
- ◆ Monitor and Flat Panel Displays
- ◆ PCI Express and Serial SATA Ports
- ◆ Gigabit Ethernet
- ◆ IEEE 1394 firewire ports
- ◆ Consumer products (STB, DVD, DSC, DVC...)

Ordering Information

Part Number	Qty per Reel	Reel Size
TPD2E001DZDR	3000	7"

Dimensions and Pin Configuration



Marking: NFGO

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

Parameter	Symbol	Value	Unit
ESD Protection (per IEC 61000-4-2)	Air Discharge WM	16	kV
	Contact Discharge BR	10	

Parameter	Symbol	Min.	Nom.	Max.	Unit
Operating Temperature	T_J	-55	+25	+150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55	+25	+150	$^{\circ}\text{C}$

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

Parameter	Symbol	Min	Typ	Max	Unit
Working Peak Reverse Voltage	V_{WM}			5.5	V
Breakdown Voltage @ 1 mA	V_{BR}	6.5		10	V
Leakage Current @ V_{WM}	I_D			0.1	μA
Capacitance	$C_{j(SD)}$			1.5	pF
Forward Surge Rating (1/20 s @ 25°C , $I_F = 10\text{ mA}$)	V_F	0.6		1.2	V
Clamping Voltage (per IEC 61000-4-5) 8/20 μs)	@ $I_{PP} = 1\text{ A}$			12	V
	@ $I_{PP} = 3\text{ A}$			18	

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified) www.sot23.com.tw

www.techpublic.com.tw

Fig1. 8/20 μs Pulse Waveform

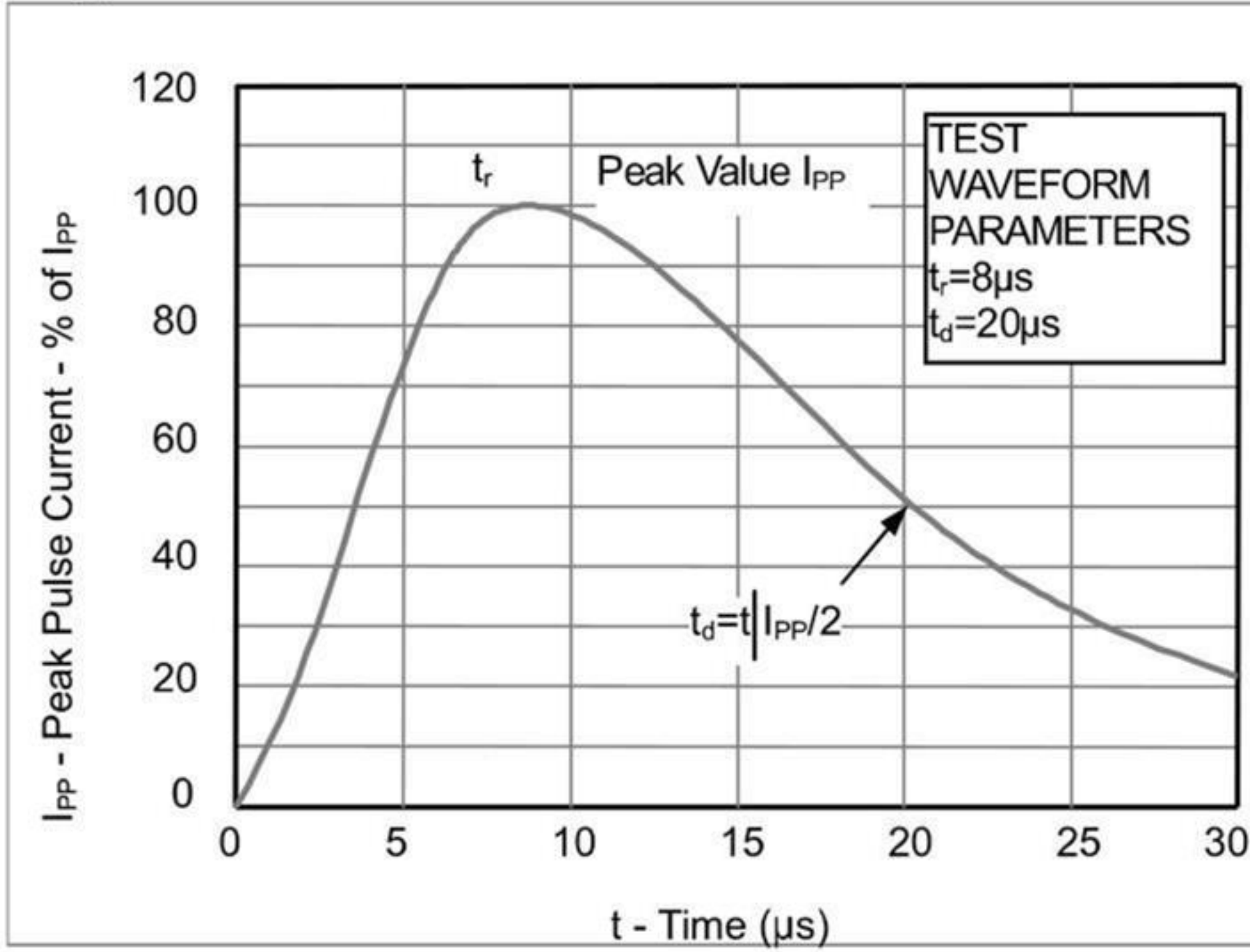


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

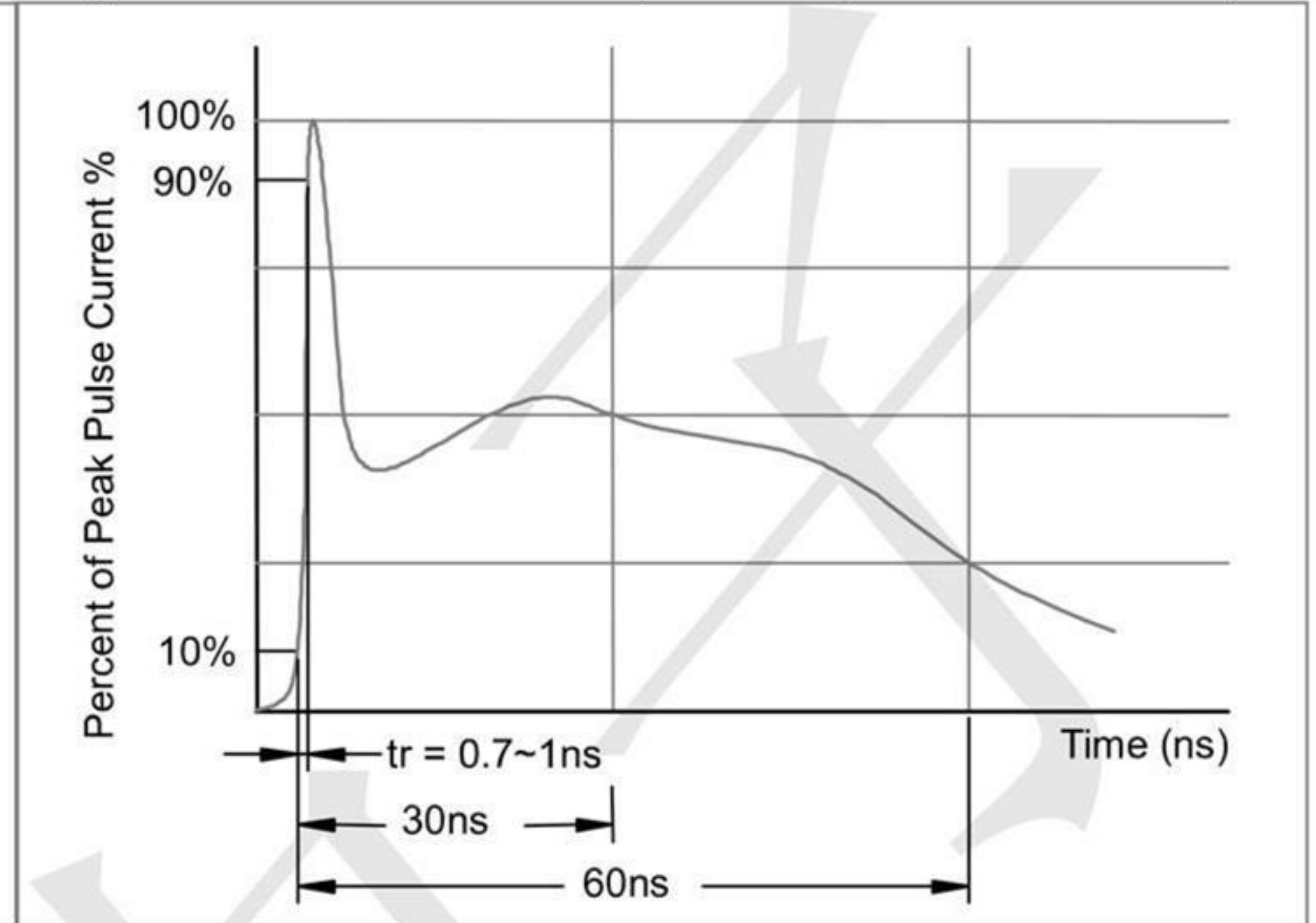
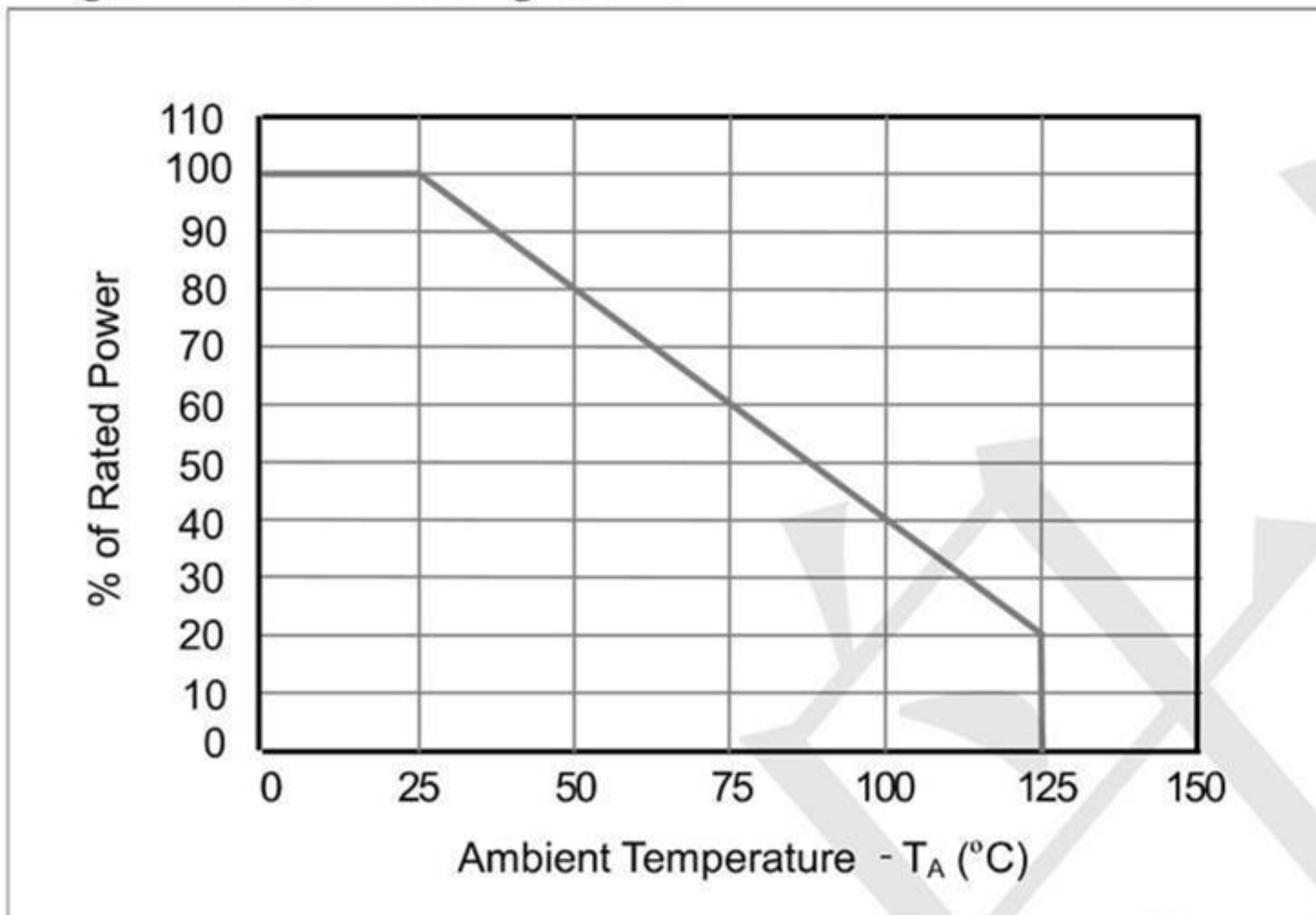
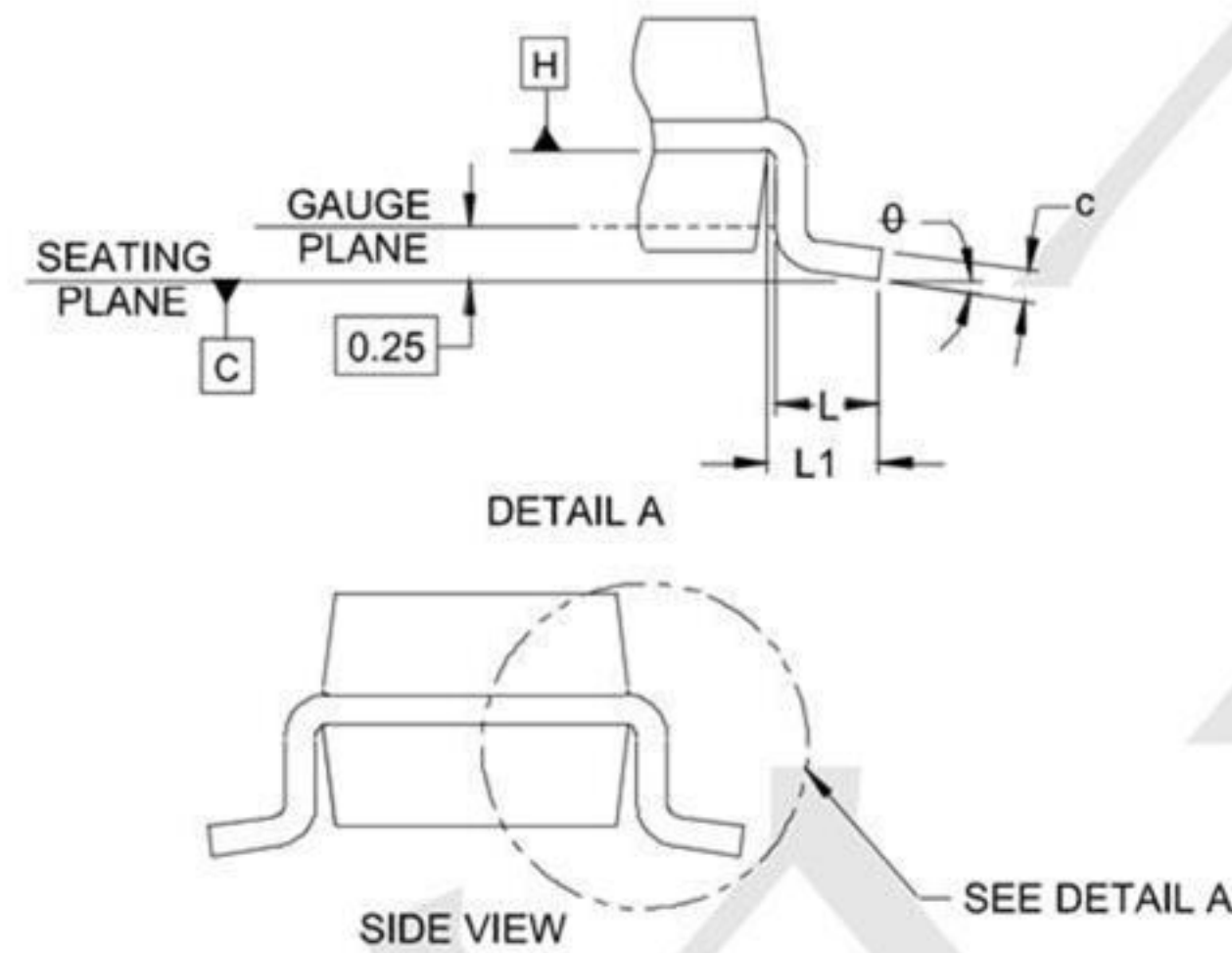
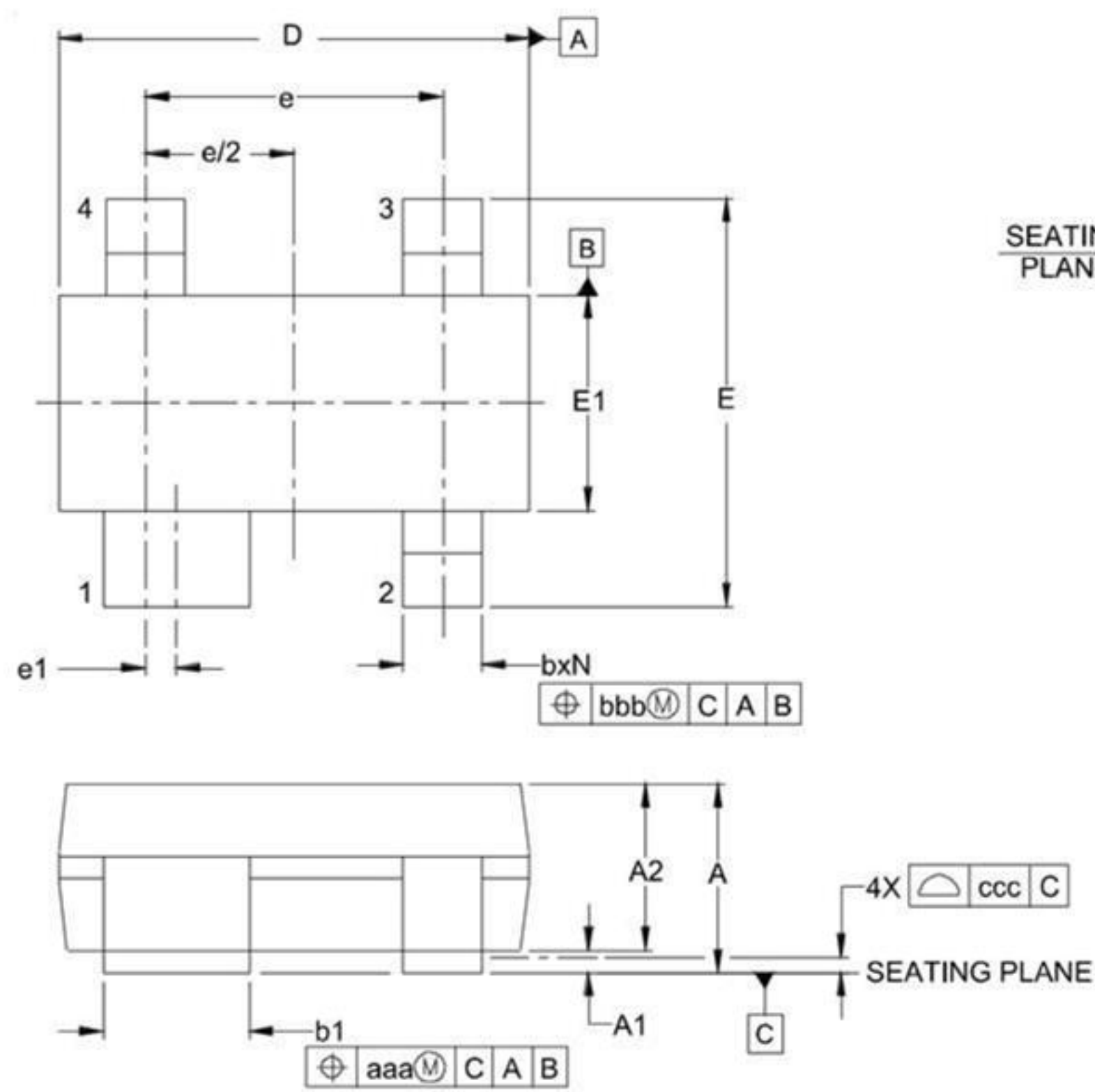


Fig3. Power Derating Curve

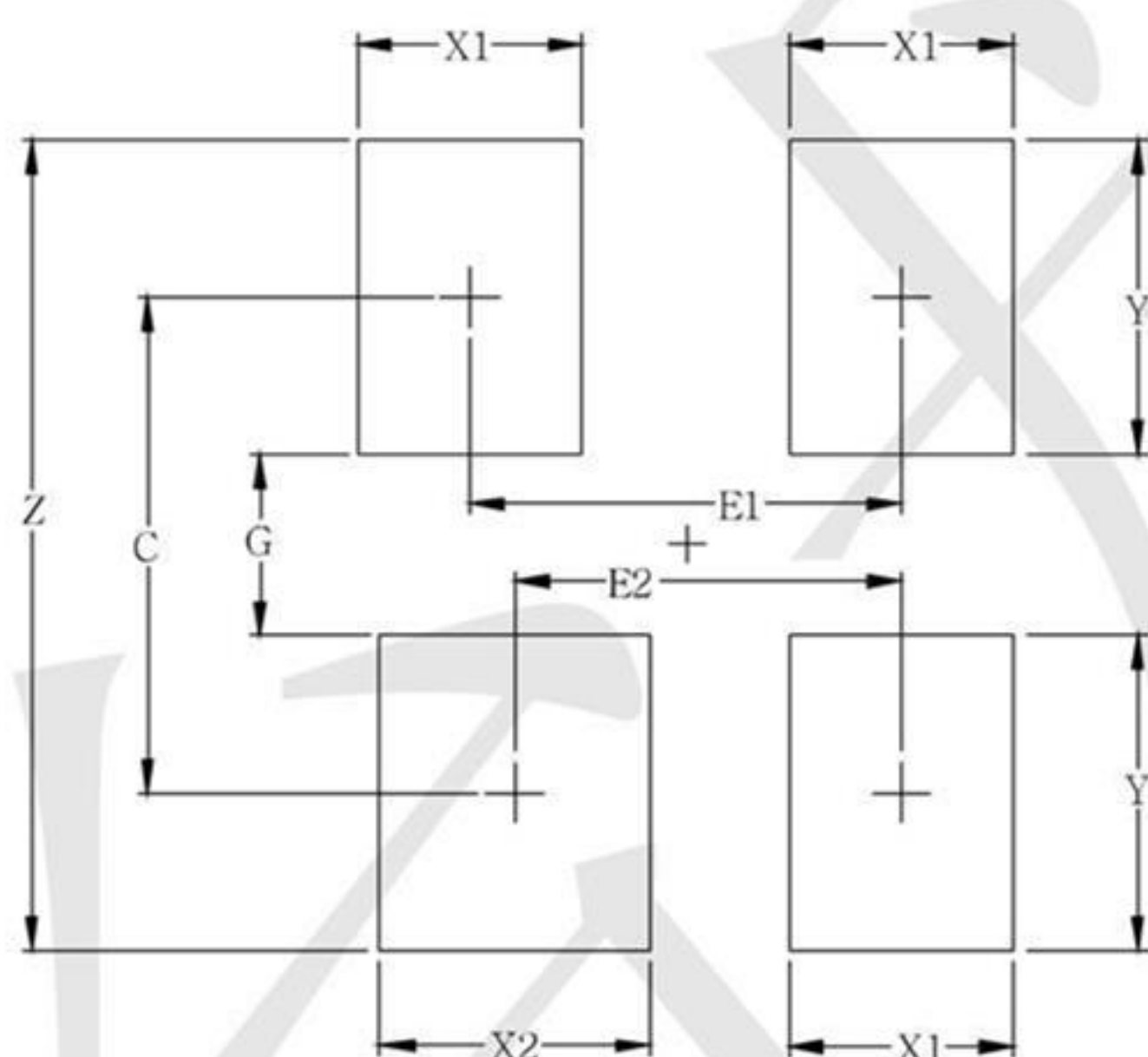


Outline Drawing - SOT-143



DIM	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.031	-	.048	0.80	-	1.22
A1	.000	-	.006	0.013	-	0.15
A2	.029	.035	.042	0.75	0.90	1.07
b	.011	-	.020	0.30	-	0.51
b1	.029	-	.037	0.76	-	0.94
c	.003	-	.008	0.08	-	0.20
D	.110	.114	.120	2.80	2.90	3.04
E	.082	.093	.104	2.10	2.37	2.64
E1	.047	.051	.055	1.20	1.30	1.40
e	.075		1.92 BSC			
e1	.008		0.20 BSC			
L	.015	.020	.024	0.40	0.50	0.60
L1	(.021)		(0.54)			
N	4		4			
θ	0°	-	8°	0°	-	8°
aaa	.006		0.15			
bbb	.008		0.20			
ccc	.004		0.10			

Land Pattern -SOT-143



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	2.20	0.087
E1	1.92	0.076
E2	1.72	0.068
G	0.80	0.031
X1	1.00	0.039
X2	1.20	0.047
Y	1.40	0.055
Z	3.60	0.141

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