

LN4292T1G

100V N-Channel Power MOSFET

1. FEATURES

- Max $R_{DS(on)} \leq 13 \text{ m}\Omega$ at $V_{GS} = 10 \text{ V}$, $I_D = 10 \text{ A}$
- Advanced Package and Silicon combination for low $R_{DS(on)}$ and high efficiency.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

2. APPLICATIONS

- DC-DC Conversion

3. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	Shipping
LN4292T1G	LN4292	4000/Tape&Reel

4. MAXIMUM RATINGS($T_a = 25^\circ\text{C}$)

Parameter		Symbol	Limits	Unit
Drain-to-Source Voltage		V_{DS}	100	V
Gate-to-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_A = 25^\circ\text{C}$	I_D	9.5	A
	$T_A = 70^\circ\text{C}$		7	A
Pulsed Drain Current		I_{DM}	38	A
Avalanche Current		I_{AS}	33	A
Avalanche Energy($L=0.1\text{mH}$)		E_{AS}	54.45	mJ
Power Dissipation(Note 1)	$T_A = 25^\circ\text{C}$	PD	2	W
	$T_A = 70^\circ\text{C}$		1.5	
Operating Junction and Storage Temperature Range		T_j/T_{stg}	$-55 \sim +150$	$^\circ\text{C}$

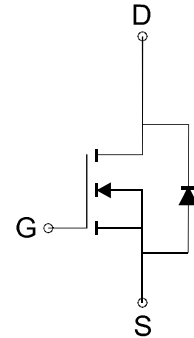
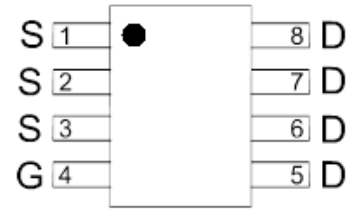
5. THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Junction-to-Ambient(Note 1)	$R_{\theta JA}$	60	$^\circ\text{C/W}$

1. The device mounted on 1in^2 FR4 board with 2 oz copper

(SOP-8)

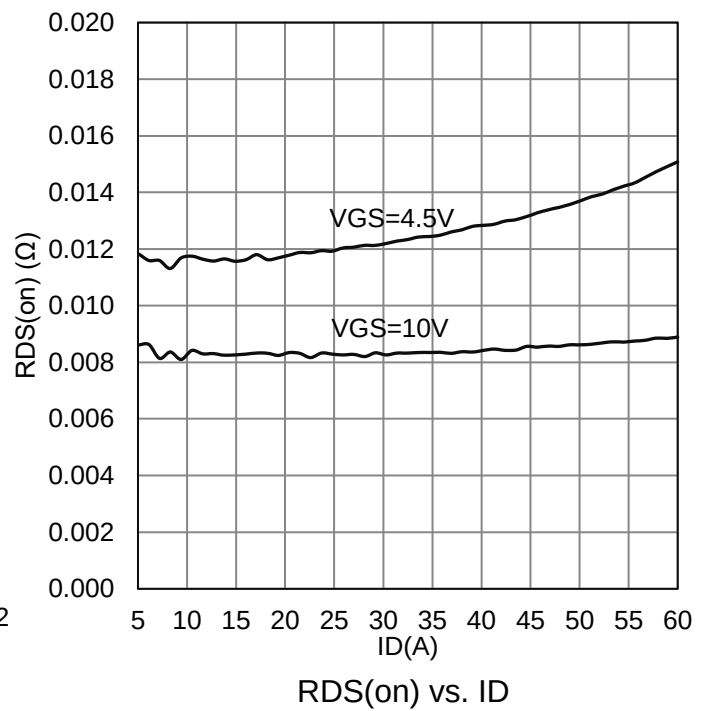
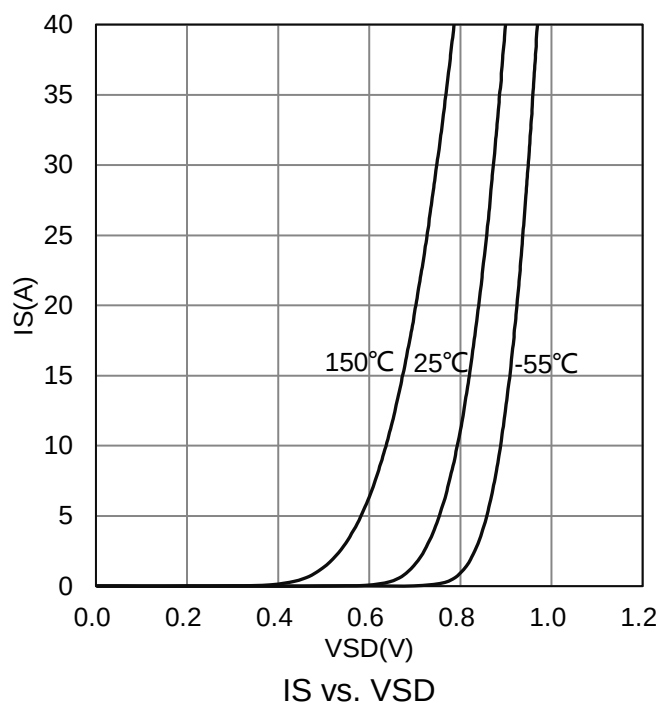
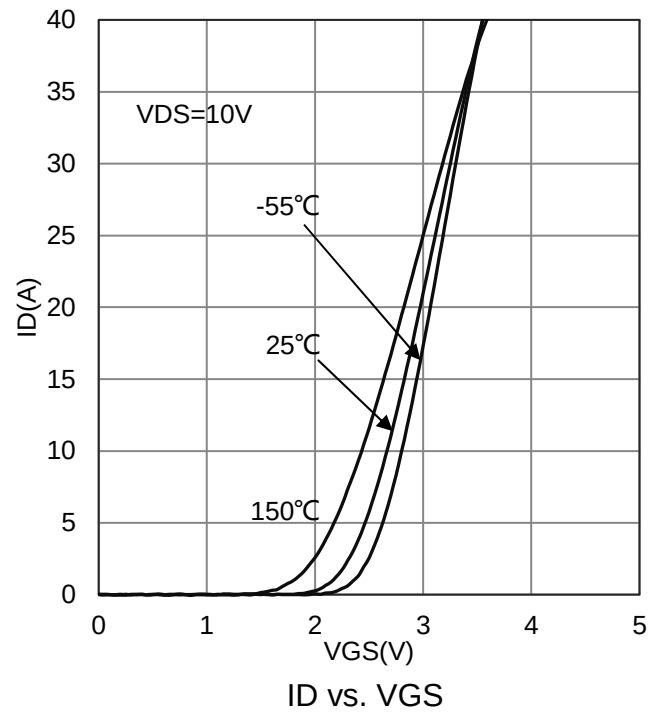
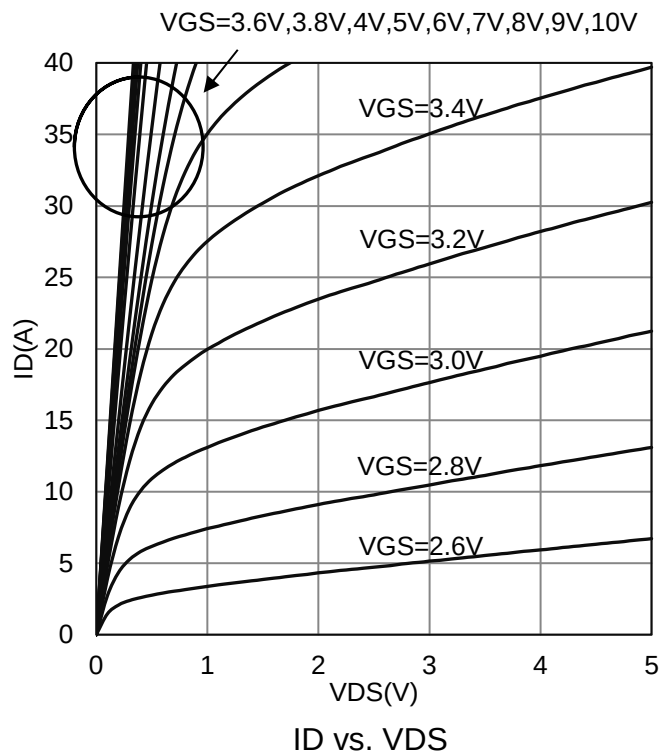
Top View



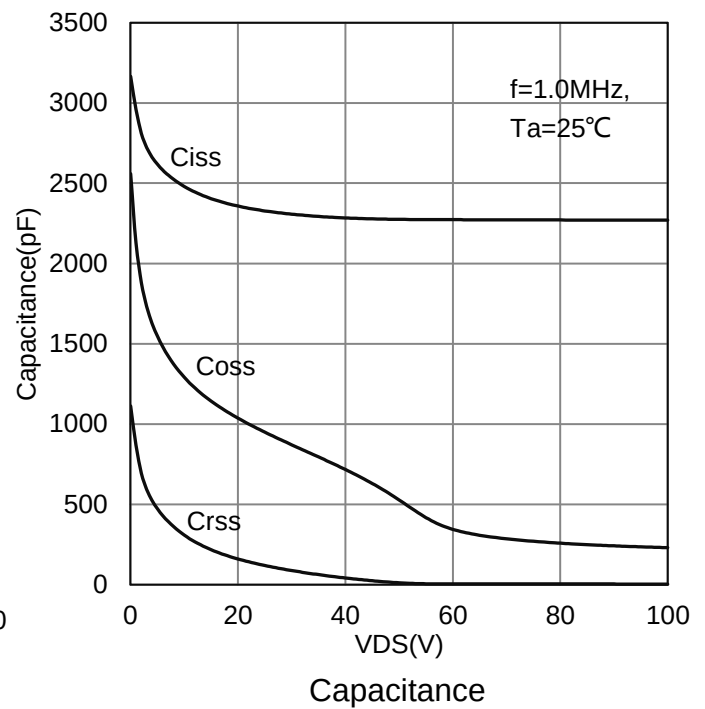
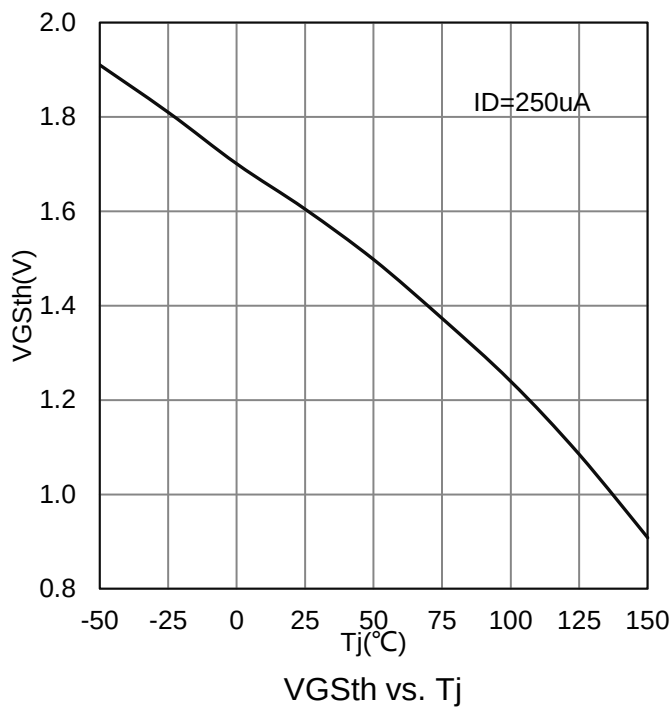
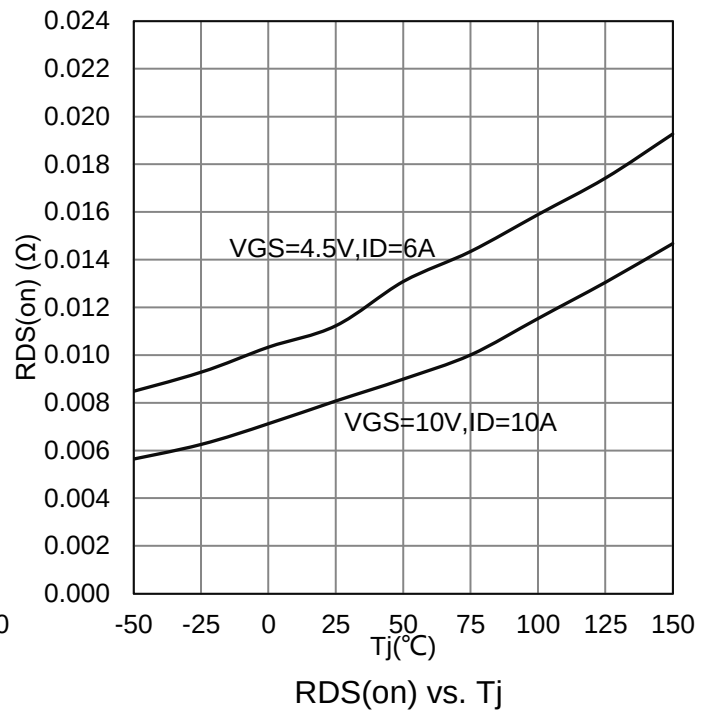
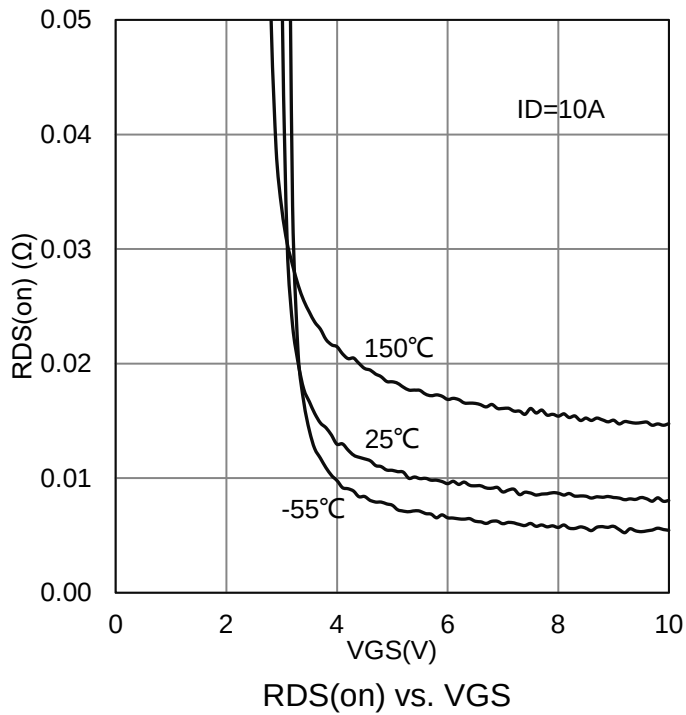
6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Static					
Drain to Source Breakdown Voltage (VGS = 0 V, ID = 250 μ A)	BVDSS	100	-	-	V
Drain-to-Source Leakage Current (VDS = 80 V, VGS = 0 V)	IDSS	-	-	800	nA
Gate-Body leakage current (VDS = 0 V, VGS = $\pm$ 20 V)	IGSS	-	-	$\pm$ 100	nA
Gate Threshold Voltage (VDS = VGS , ID = 250 μ A)	VGS(TH)	1	1.5	3	V
Drain-to-Source On-Resistance (VGS = 10 V, ID = 10 A) (VGS = 4.5 V, ID = 6 A)	RDS(ON)	- -	- -	13 19	m Ω
Dynamic					
Total Gate Charge VGS(0 ~10 V)	(ID = 13 A, VDS = 50 V)	Qg	-	46.5	nC
Total Gate Charge VGS(0 ~5 V)		Qg	-	28.6	
Gate to Source Charge		Qgs	-	5.3	
Gate to Drain Charge		Qgd	-	16	
Turn-on Delay Time	(VDS = 50 V, ID = 13 A, RG = 6 Ω , VGS = 10 V)	td(ON)	-	15	nS
Rise Time		tr	-	20	
Turn-Off Delay Time		td(OFF)	-	74	
Fall Time		tf	-	48	
Input Capacitance	(VGS = 0 V, VDS = 50 V, f = 1MHz)	Ciss	-	2275	pF
Output Capacitance		Coss	-	531	
Reverse Transfer Capacitance		Crss	-	11	
Diode Forward Voltage (VGS = 0 V, IS = 2.1 A) (VGS = 0 V, IS = 13 A)	VSD	- -	0.7 0.8	1.2 1.3	V
Reverse Recovery Time (IF = 13 A, di/dt = 100 A/ μ s)	trr	-	56	90	nS
Reverse Recovery Charge (IF = 13 A, di/dt = 100 A/ μ s)	Qrr	-	80	118	nC

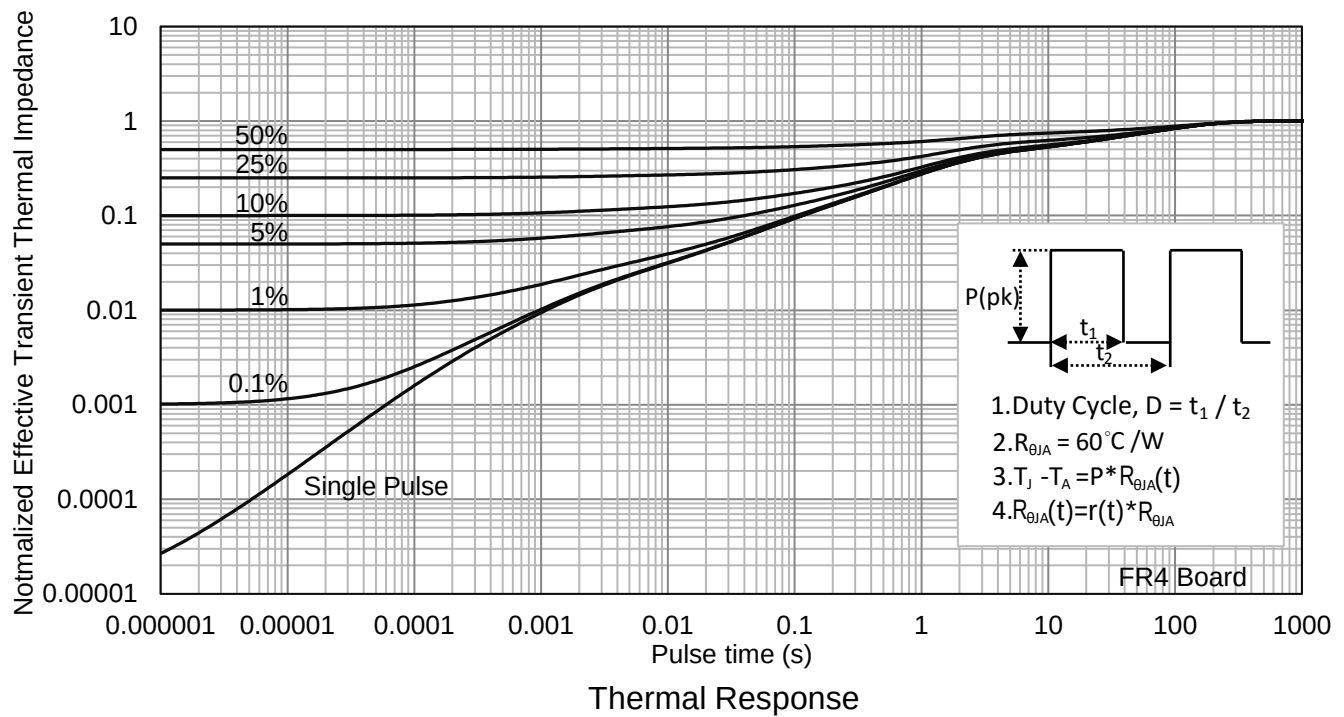
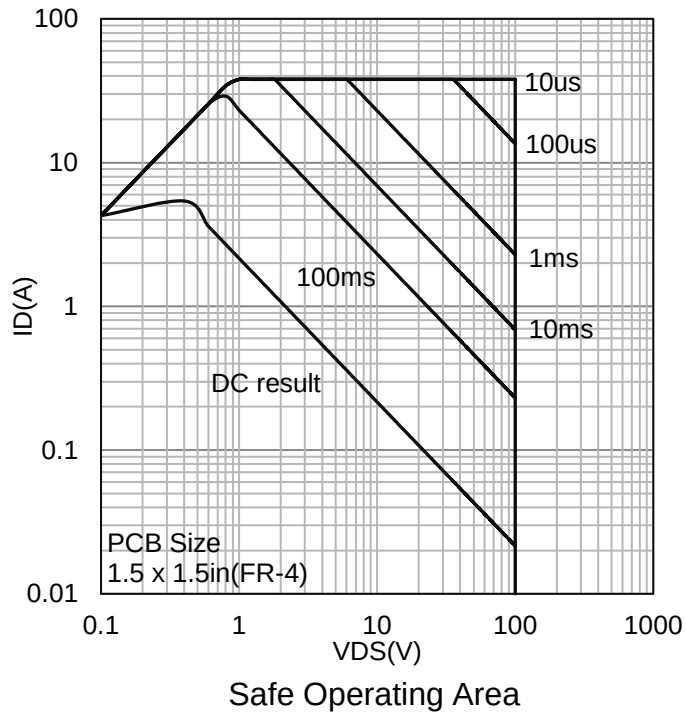
7. ELECTRICAL CHARACTERISTICS CURVES



7. ELECTRICAL CHARACTERISTICS CURVES(Con.)

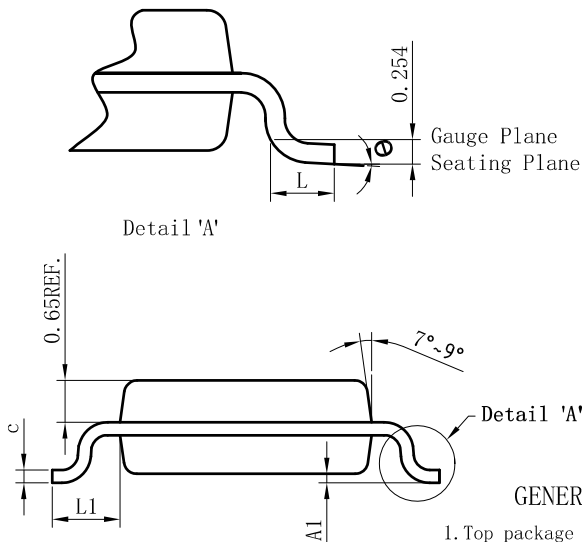
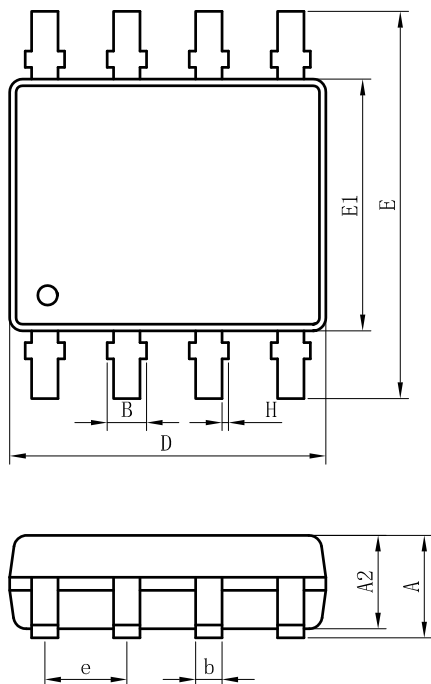


7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



8.OUTLINE AND DIMENSIONS

SOP8

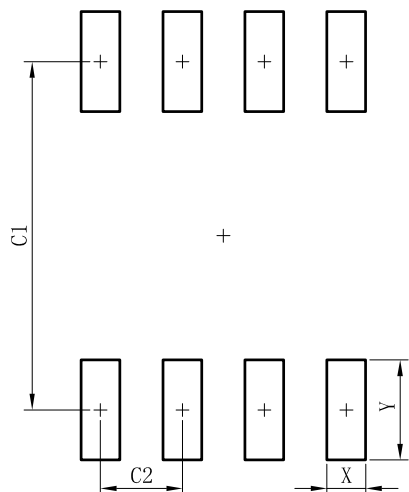


SOP8			
DIM	MIN	NOR	MAX
A	—	—	1.75
A1	0.10	0.15	0.20
A2	1.35	1.45	1.55
b	0.33	0.42	0.51
c	0.15	0.22	0.29
D	4.77	4.90	5.03
E	5.80	6.00	6.20
E1	3.80	3.90	4.00
e	1.27BSC		
L	0.46	0.66	0.86
L1	0.85	1.05	1.25
θ	0°	5°	8°
B	—	—	0.55
H	0	0.05	0.10
All Dimensions in mm			

GENERAL NOTES

- 1.Top package surface finish $Ra0.4 \pm 0.2\mu m$
- 2.Bottom package surface finish $Ra0.7 \pm 0.2\mu m$
- 3.Side package surface finish $Ra0.4 \pm 0.2\mu m$
- 4.Package Body Sizes Exclude Mold Flash, Protrusion Or Gate Burrs. Mold Flash, Protrusion Or Gate Burrs Shall Not Exceed 0.10 mm Per Side.
- 5.Dimension "b" Does Not Include Dambar Protrusion.

9.SOLDERING FOOTPRINT



SOP8	
DIM	(mm)
X	0.60
Y	1.55
C1	5.40
C2	1.27

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