



SPN4392

N-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPN4392 is the N-Channel logic enhancement mode power field effect transistors are produced using high cell density , DMOS trench technology.

This high density process is especially tailored to minimize on-state resistance.

These devices are particularly suited for low voltage application , notebook computer power management and other battery powered circuits where high-side switching .

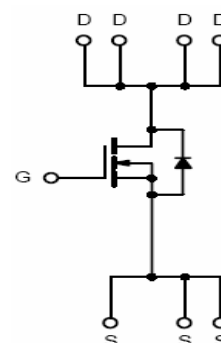
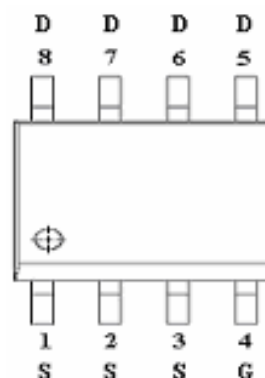
FEATURES

- ◆ 30V/22A, $R_{DS(ON)} = 8m\Omega @ V_{GS} = 10V$
- ◆ 30V/18A, $R_{DS(ON)} = 12m\Omega @ V_{GS} = 4.5V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOP – 8P package design

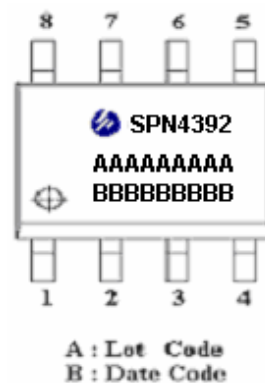
APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- High-Side DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter

PIN CONFIGURATION(SOP – 8P)



PART MARKING





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PIN DESCRIPTION

Pin	Symbol	Description
1	S	Source
2	S	Source
3	S	Source
4	G	Gate
5	D	Drain
6	D	Drain
7	D	Drain
8	D	Drain

ORDERING INFORMATION

Part Number	Package	Part Marking
SPN4392S8RG	SOP- 8P	SPN4392
SPN4392S8TG	SOP- 8P	SPN4392

※ SPN4392S8RG : 13" Tape Reel ; Pb – Free

※ SPN4392S8TG : Tube ; Pb – Free

ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

Parameter		Symbol	Typical	Unit
Drain-Source Voltage		V _{DSS}	30	V
Gate –Source Voltage		V _{GSS}	±20	V
Continuous Drain Current(T _J =150°C)	T _A =25°C	I _D	22	A
	T _A =70°C		18	
Pulsed Drain Current		I _{DM}	50	A
Continuous Source Current(Diode Conduction)		I _S	5.6	A
Power Dissipation	T _A =25°C	P _D	2.5	W
	T _A =70°C		1.6	
Operating Junction Temperature		T _J	-55/150	°C
Storage Temperature Range		T _{STG}	-55/150	°C
Thermal Resistance-Junction to Ambient		R _{θJA}	80	°C/W



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ELECTRICAL CHARACTERISTICS

(T_A=25°C Unless otherwise noted)

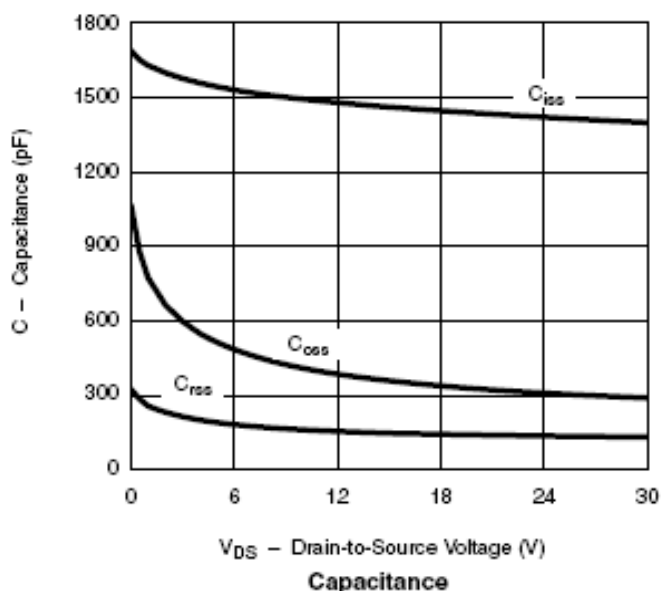
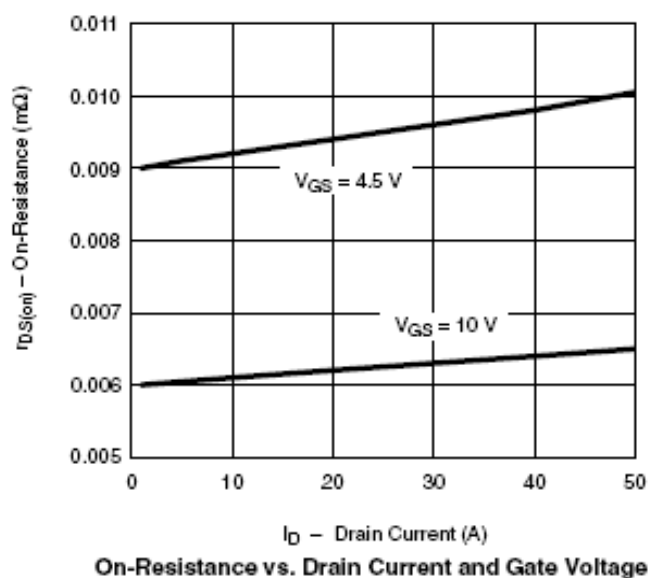
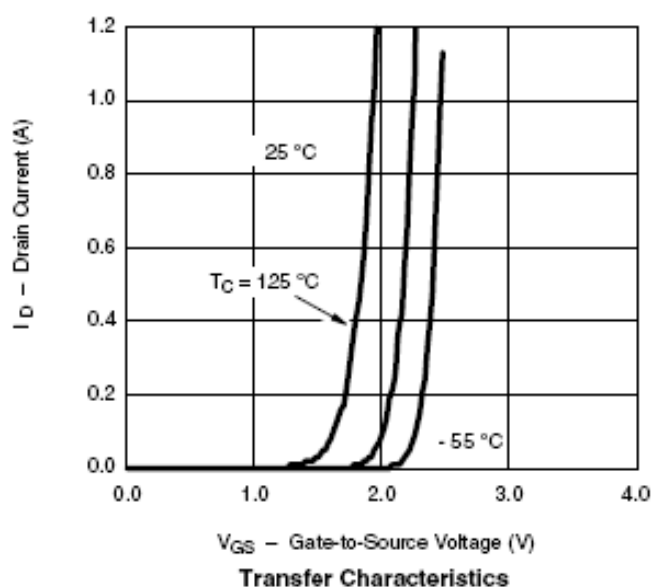
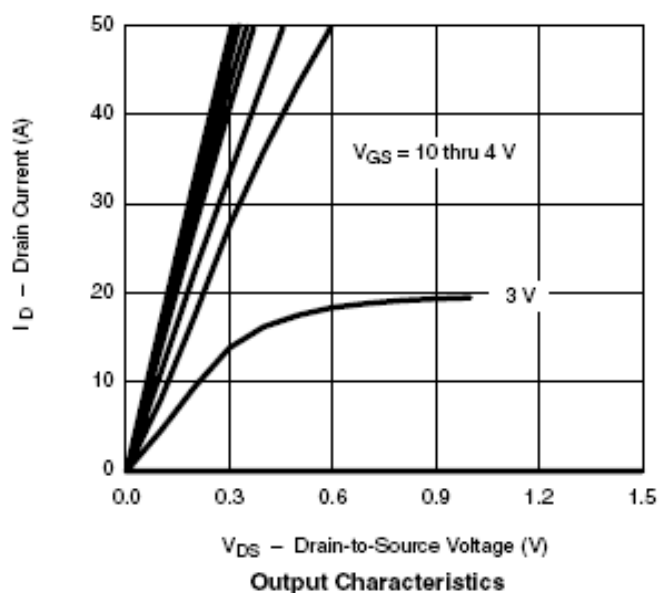
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250uA	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _{DS} = 250uA	0.6		1.6	
Gate Leakage Current	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30V, V _{GS} = 0V			1	uA
		V _{DS} = 30V, V _{GS} = 0V, T _J = 125°C			100	
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 13A		0.006	0.008	Ω
		V _{GS} = 4.5V, I _D = 10A		0.009	0.012	
Forward Transconductance	g _{fs}	V _{DS} = 15V, I _D = 20 A	10			S
Diode Forward Voltage	V _{SD}	I _F = 13 A, V _{GS} = 0V		1.0	1.5	V
Dynamic						
Total Gate Charge	Q _g	V _{DS} = 15V, V _{GS} = 5V, I _D = 13 A		12	20	nC
Gate-Source Charge	Q _{gs}			4		
Gate-Drain Charge	Q _{gd}			5		
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 25V, F=1MHz		1500		pF
Output Capacitance	C _{oss}			320		
Reverse Transfer Capacitance	C _{rss}			200		
Turn-On Time	t _{d(on)}	(V _{DD} = 15 V, I _D = 13 A, V _{GS} =10V, R _G = 2.5Ω)		8	12	ns
	t _r			10	15	
Turn-Off Time	t _{d(off)}			18	30	
	t _f			6	9	



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TYPICAL CHARACTERISTICS

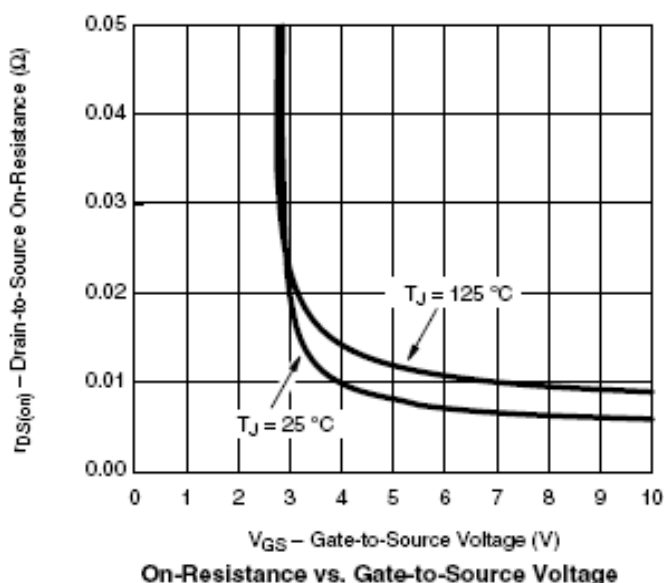
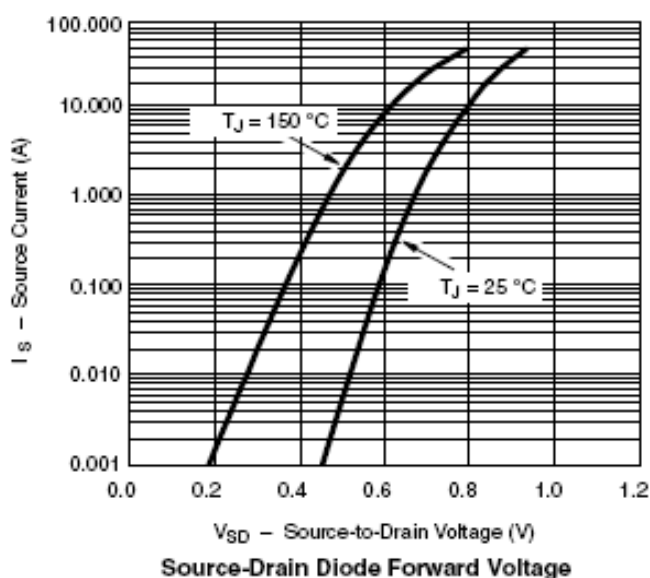
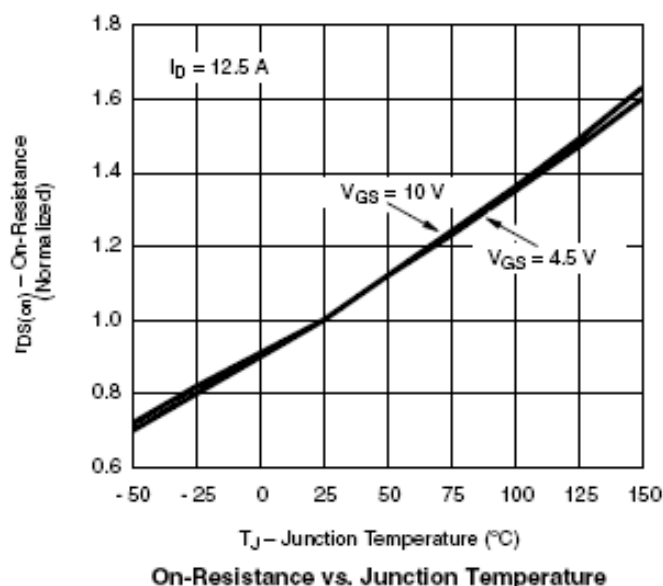
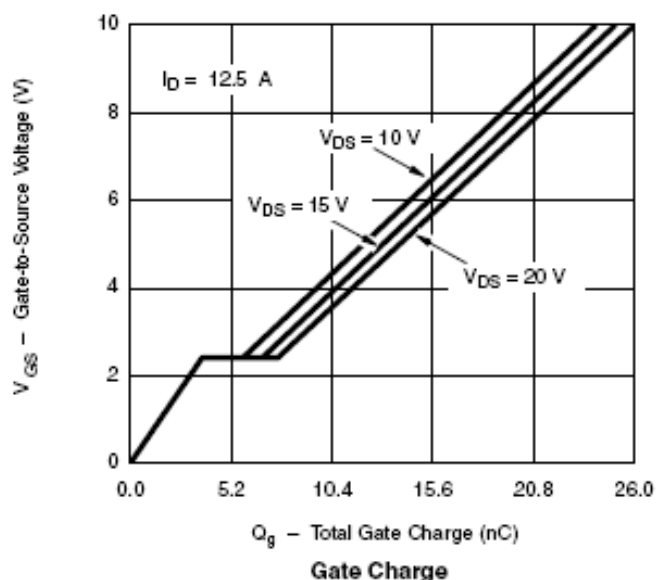




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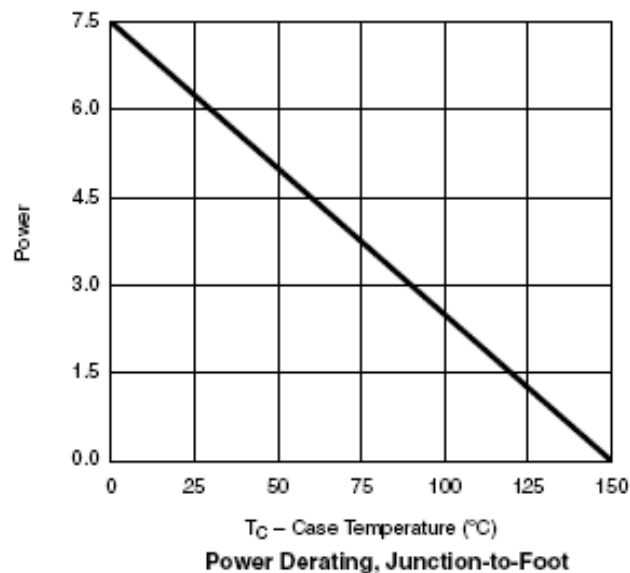
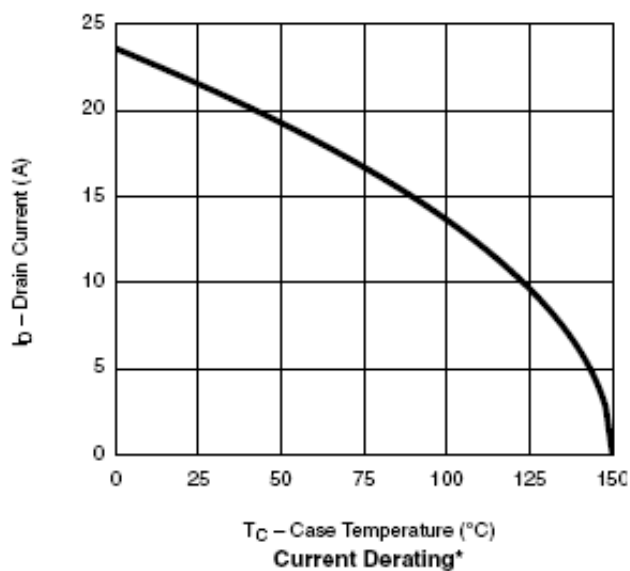
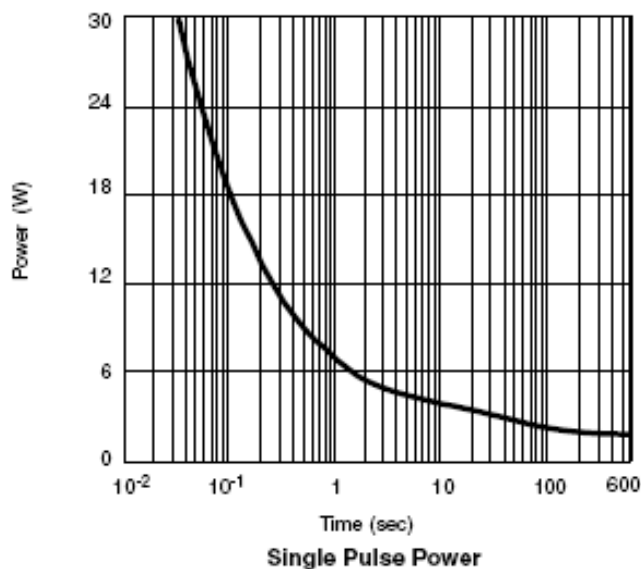
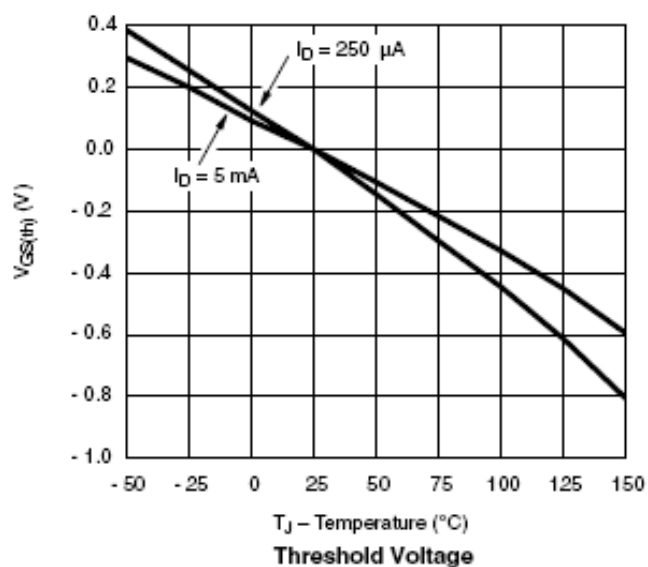




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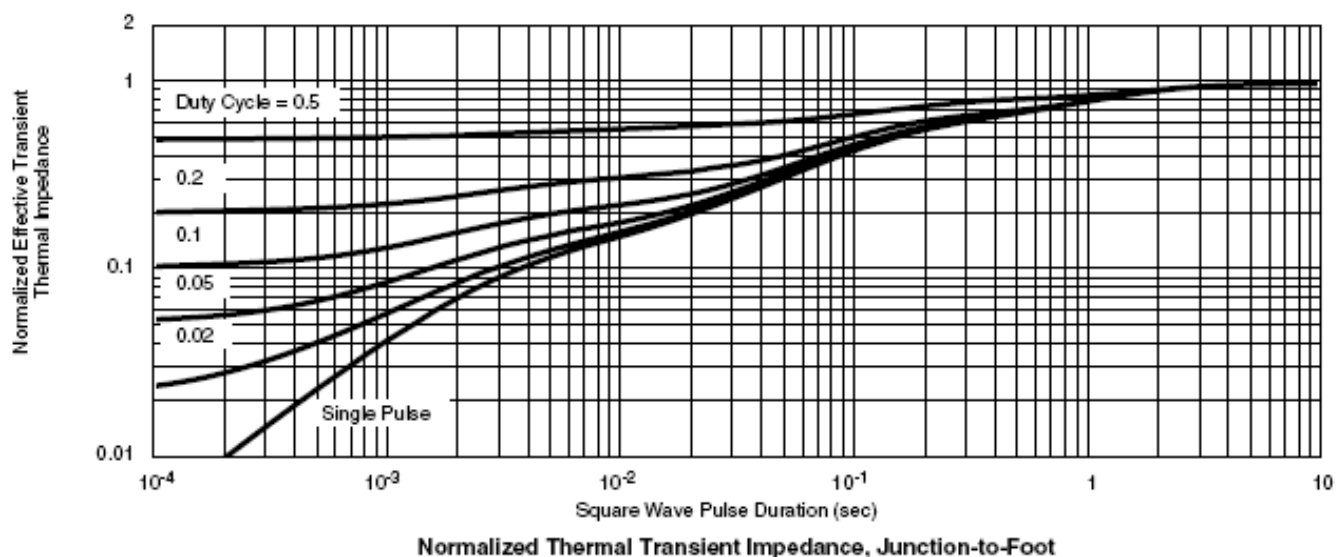
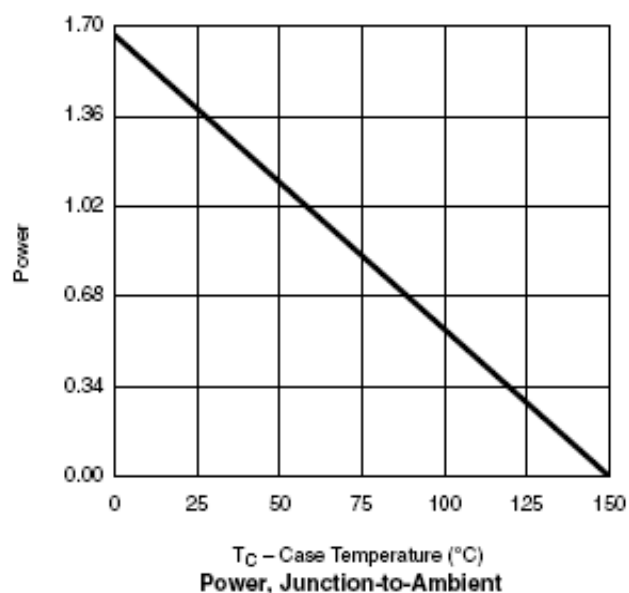
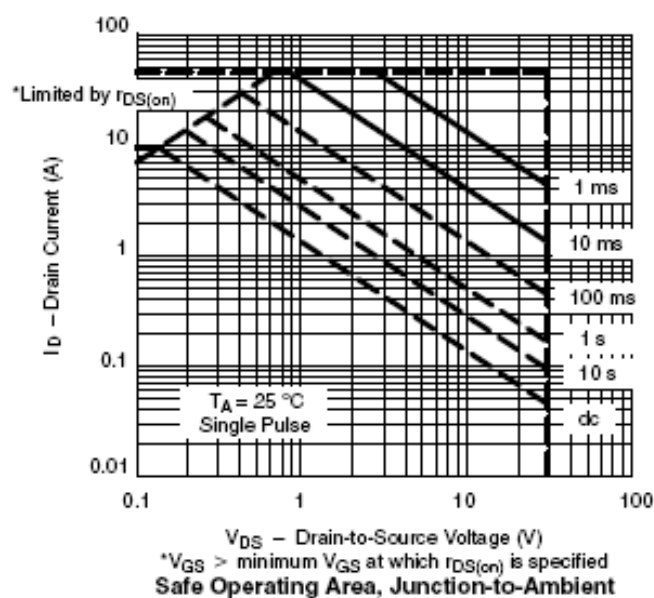




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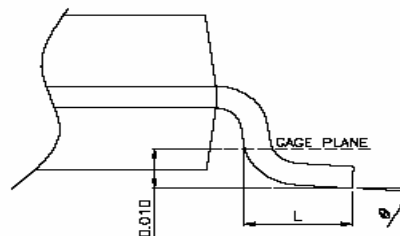
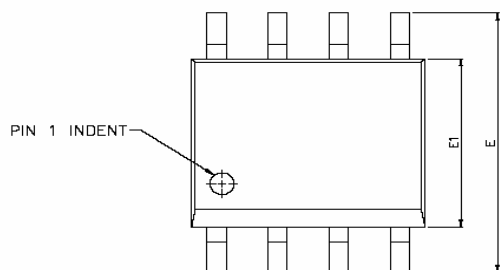




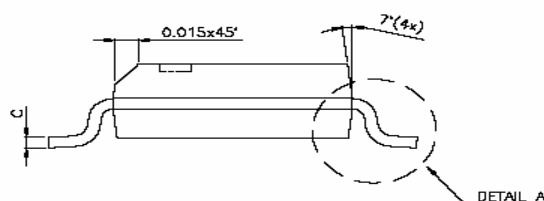
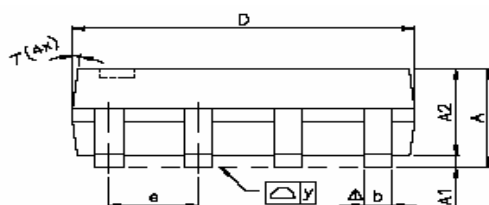
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SOP- 8 PACKAGE OUTLINE



DETAIL A



SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.47	1.60	1.73	0.058	0.063	0.068
A1	0.10	—	0.25	0.004	—	0.010
A2	—	1.45	—	—	0.057	—
b	0.33	0.41	0.51	0.013	0.016	0.020
C	0.19	0.20	0.25	0.0075	0.008	0.0098
D	4.80	4.85	4.95	0.189	0.191	0.195
E	5.80	6.00	6.20	0.228	0.236	0.244
E1	3.80	3.90	4.00	0.150	0.154	0.157
e	—	1.27	—	—	0.050	—
L	0.38	0.71	1.27	0.015	0.028	0.050
Δy	—	—	0.076	—	—	0.003
θ	0°	—	8°	0°	—	8°



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