

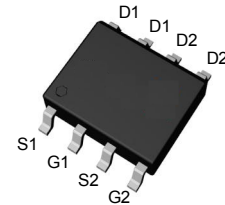
Dual N-Channel Enhancement Mode MOSFET

- 60V/9A
- $R_{DS(ON)}=15m\Omega$ (typ) @VGS=10V
 $R_{DS(ON)}=20m\Omega$ (typ) @VGS=4.5V
- 100% UIS & RG Tested
- Reliable and Rugged
- Lead Free and Green Devices Available (RoHS Compliant)

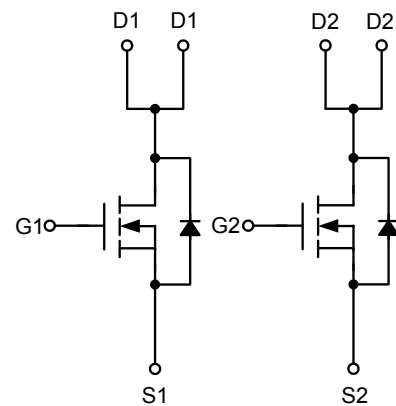
Applications

- Power Management for Industrial DC/DC Converters

Pin Description



Top View of SOP8



N-Channel MOSFET

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

Symbol	Parameter		Rating	Unit
Common Ratings				
V _{DSS}	Drain-Source Voltage		60	V
V _{GSS}	Gate-Source Voltage		±20	
I _D	Continuous Drain Current ^A	T _A =25°C	9	A
		T _A =70°C	6.8	
I _{DM}	Pulsed Drain Current ^B		27	
T _{STG} , T _j	Storage Temperature Range		-55 to 150	°C
P _D	Power Dissipation	T _A =25°C	2	W
		T _A =70°C	1.28	
R _{θJL}	Thermal Resistance-Junction to Case		40	°C/W
R _{θJA}	Thermal Resistance-Junction to Ambient	t≤10S	62.5	
		Steady State ^C	110	

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress rating only and functional device operation is not implied

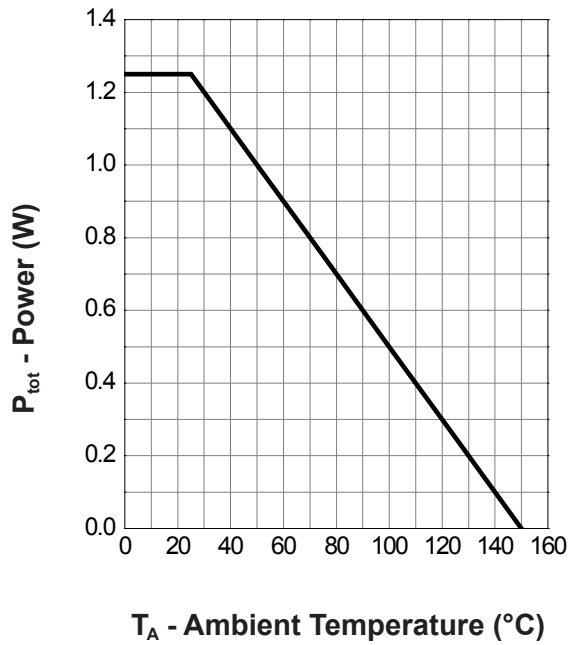
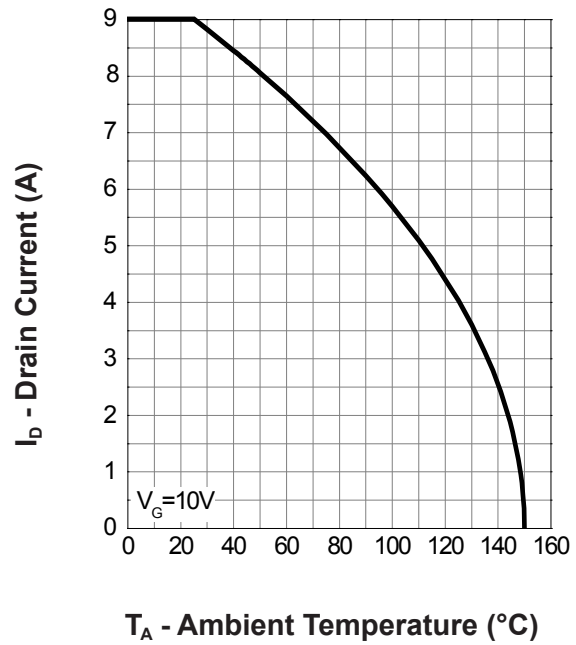
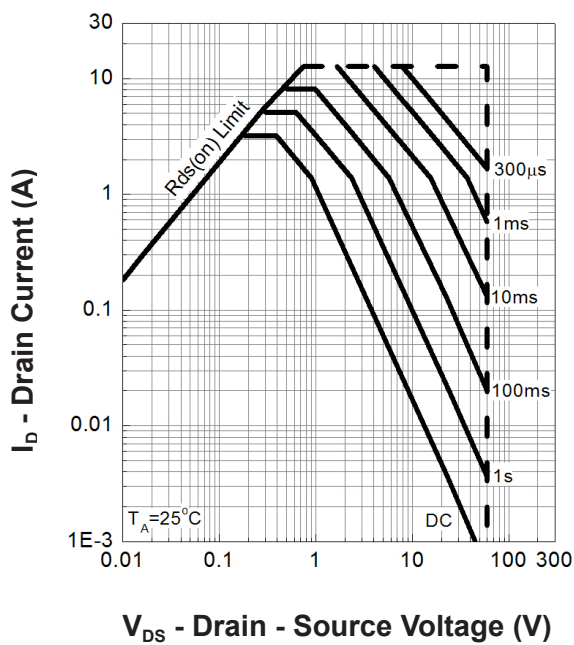
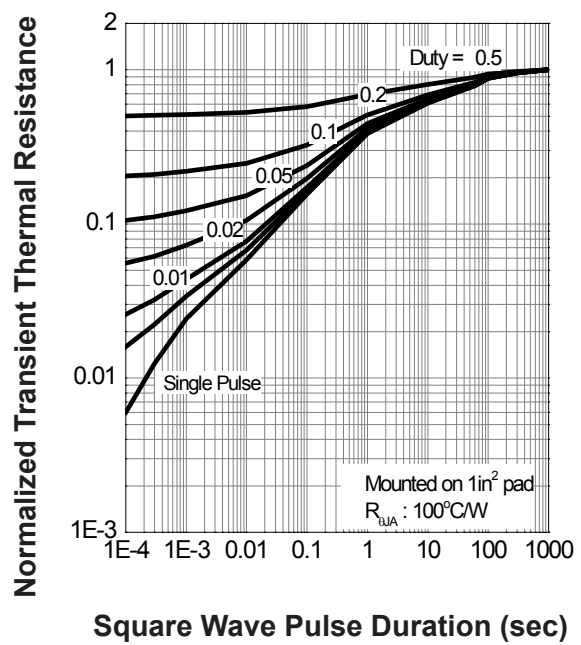
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =250μA	60	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =48V, V _{GS} =0V	-	-	1	μA
		T _J =55°C	-	-	5	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250μA	1	1.8	3	V
I _{GSS}	Gate Leakage Current	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
R _{DS(ON)}	Drain-Source On-state Resistance	V _{GS} =10V, I _{DS} =6.3A	-	15	20	mΩ
		V _{GS} =4.5V, I _{DS} =5A	-	20	25	
Body Diode Characteristics						
V _{SD}	Diode Forward Voltage	I _{SD} =1A, V _{GS} =0V	-	0.8	1.3	V
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =25V, Frequency=1.0MHz	-	730	-	pF
C _{oss}	Output Capacitance		-	140	-	
C _{rss}	Reverse transfer capacitance		-	30	-	
t _{d(ON)}	Turn-on delay Time	V _{GS} =10V ,V _{DS} =30V R _G =6Ω, I _D =1A	-	8	16	nS
t _r	Turn-on rise Time		-	6	12	
t _{d(OFF)}	Turn-off delay Time		-	25	46	
t _f	Turn-off rise Time		-	4	8	
Gate Charge Characteristics						
Q _g	Total Gate Charge	V _{DS} =30V, V _{GS} =10V, I _{DS} =5A	-	15.6	16	nC
Q _{gs}	Gate-Source Charge		-	1.3	-	
Q _{gd}	Gate-Drain Charge		-	4.5	-	

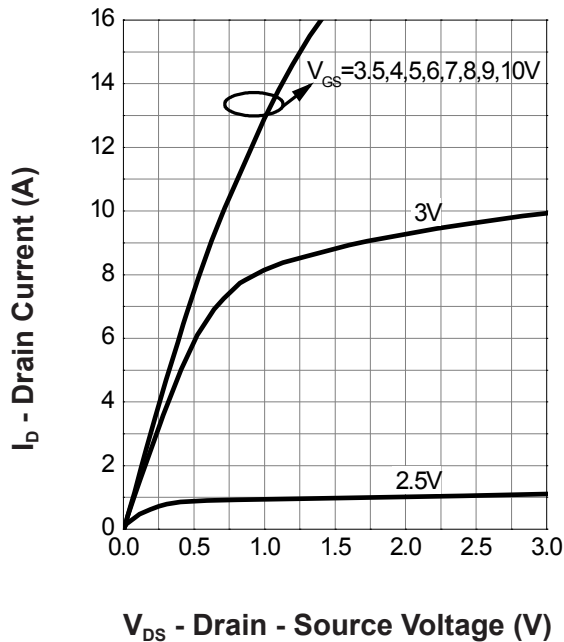
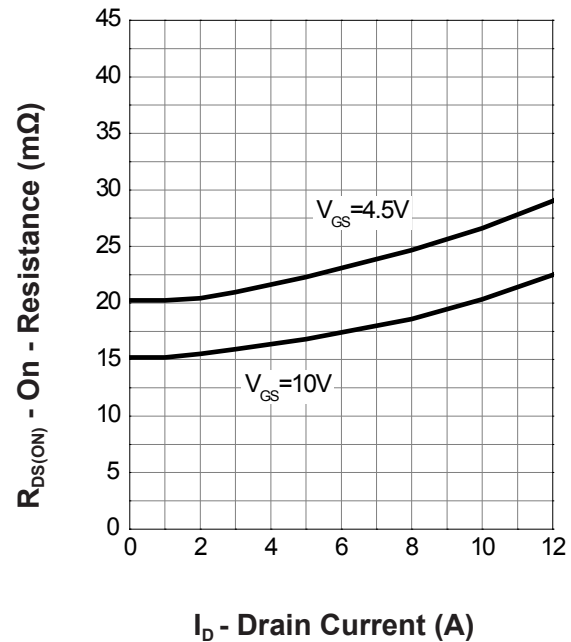
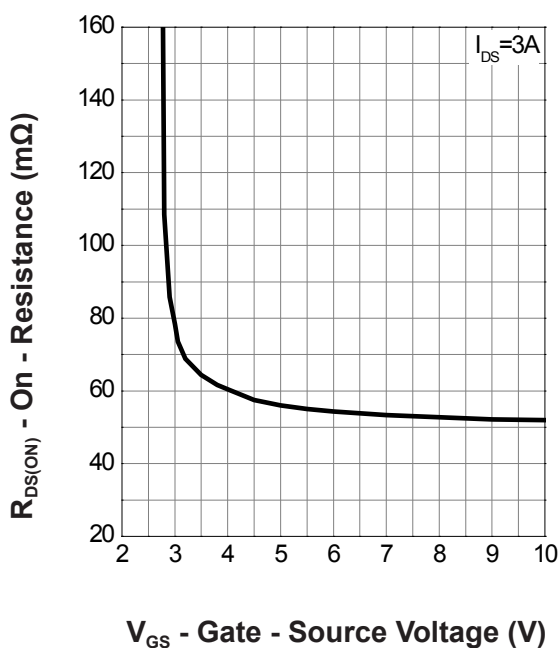
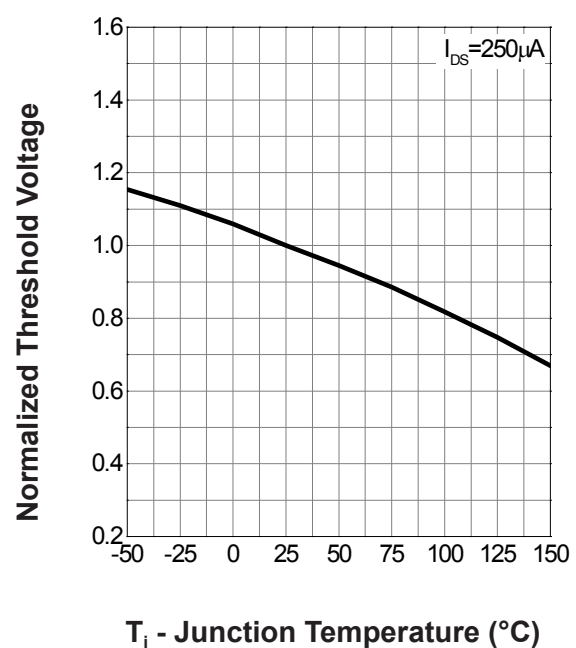
Note: 1. Pulse test: pulse width $\leq$ 300 μ S, duty cycle $\leq$ 2%

2.Static parameters are based on package level with recommended wire bonding

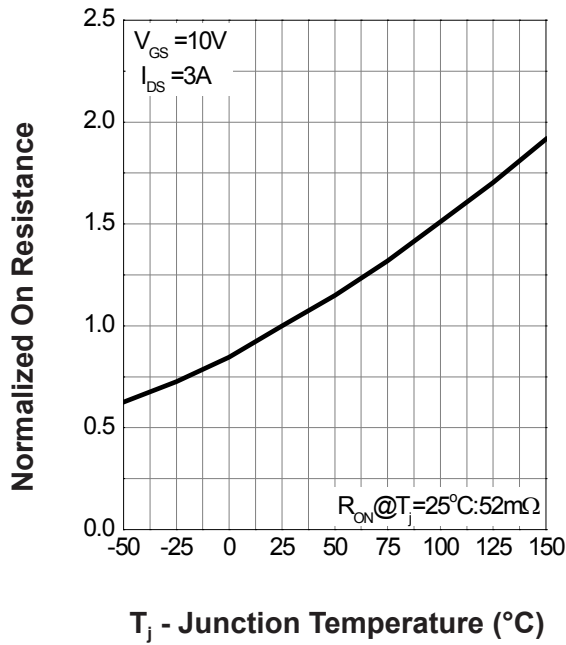
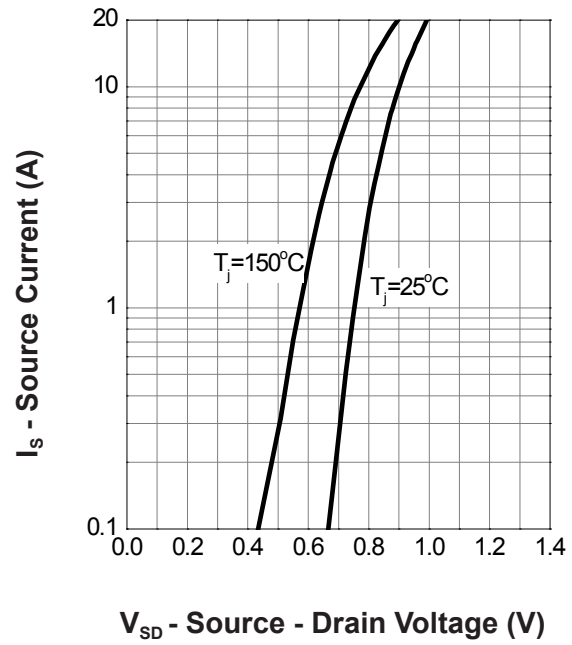
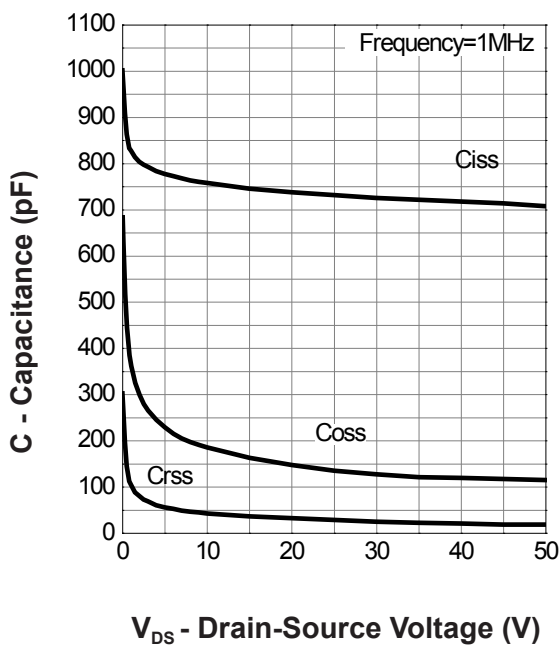
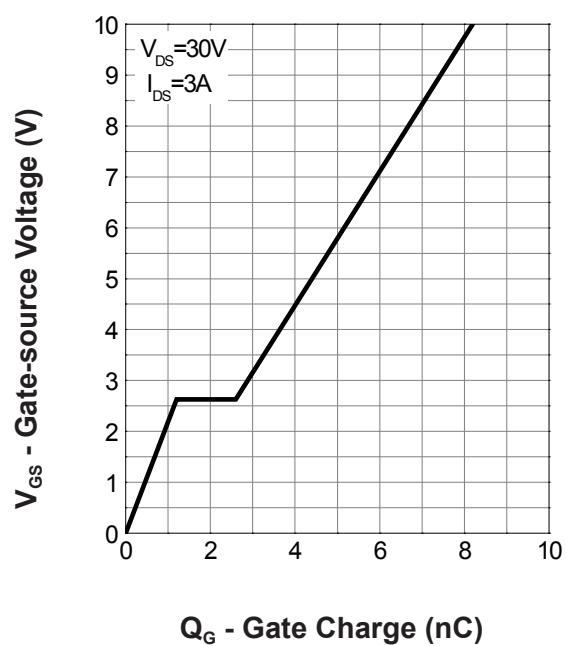
Typical Operating Characteristics

Power Dissipation

Drain Current

Safe Operation Area

Thermal Transient Impedance


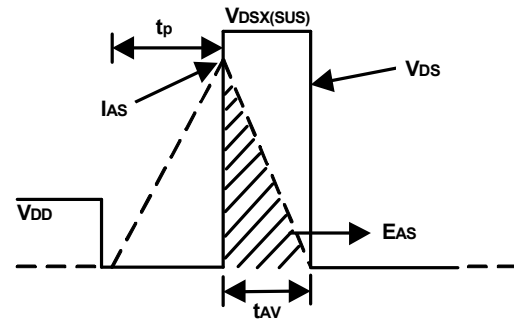
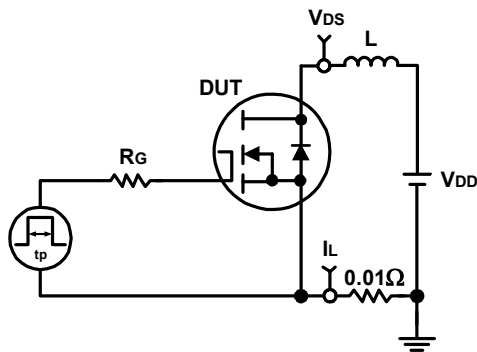
Typical Operating Characteristics(Cont.)

Output Characteristics

Drain-Source On Resistance

Gate-Source On Resistance

Gate Threshold Voltage


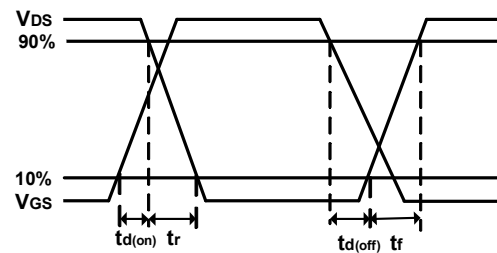
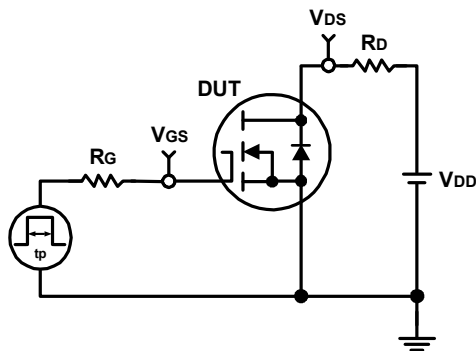
Typical Operating Characteristics(Cont.)

Drain-Source On Resistance

Source-Drain Diode Forward

Capacitance

Gate Charge


Avalanche Test Circuit and Waveforms

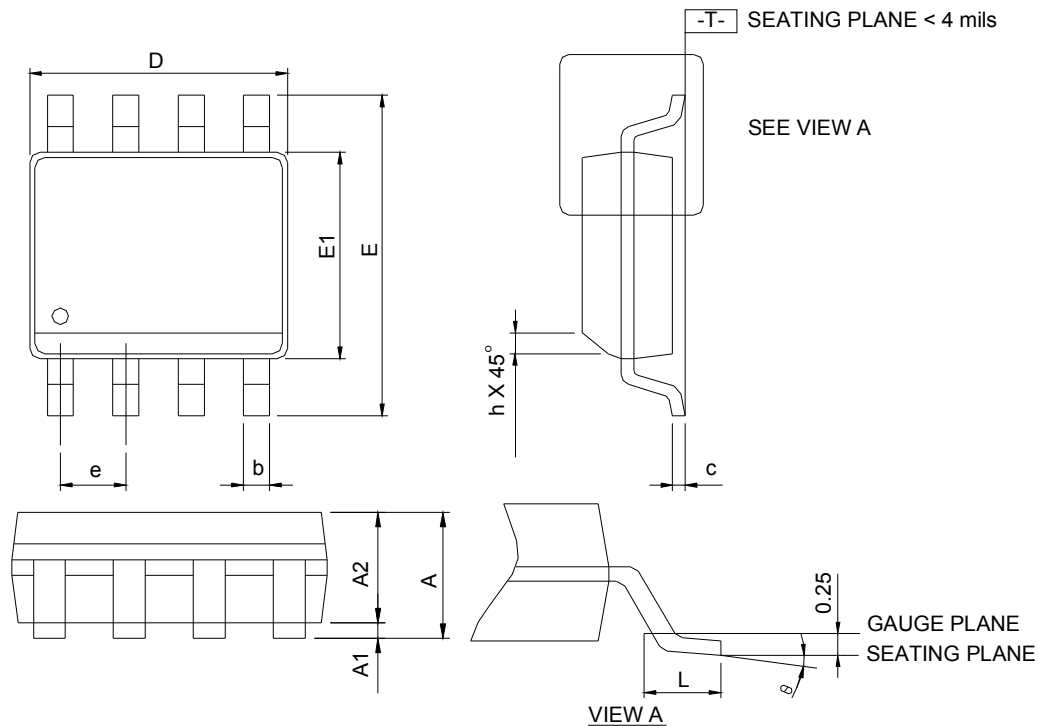


Switching Time Test Circuit and Waveforms



Package Information

SOP8



DIMENSIONS	SOP8			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	-	1.75	-	0.069
A1	0.10	0.25	0.004	0.010
A2	1.25	-	0.049	-
b	0.31	0.51	0.012	0.020
c	0.17	0.25	0.007	0.010
D	4.80	5.00	0.189	0.197
E	5.80	6.20	0.228	0.244
E1	3.80	4.00	0.150	0.157
e	1.27 BSC		0.050 BSC	
h	0.25	0.50	0.010	0.020
L	0.40	1.27	0.016	0.050
θ	0°	8°	0°	8°

Note: 1. Follow JEDEC MS-012 AA.

2. Dimension D" does not include mold flash, protrusions or gate burrs.
Mold flash, protrusion or gate burrs shall not exceed 6 mil per side.

3. Dimension E" does not include inter-lead flash or protrusions.
Inter-lead flash and protrusions shall not exceed 10 mil per side.

RECOMMENDED LAND PATTERN

