

Features

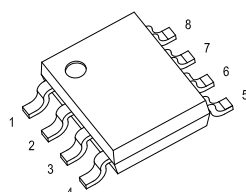
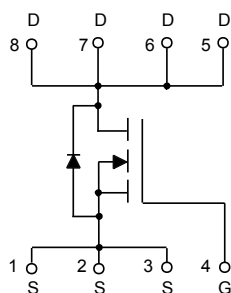
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 50°C/W Junction to Case^(Note2)

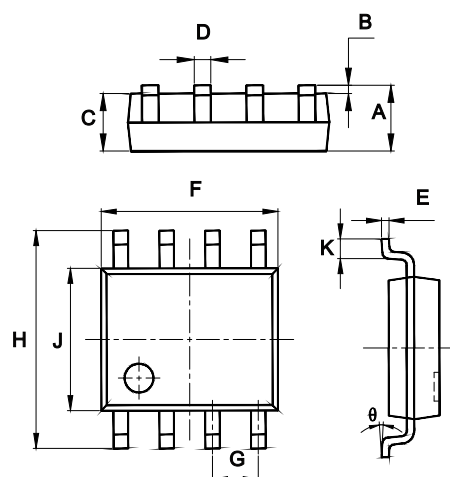
Parameter	Symbol	Rating	Unit
Drain -Source Voltage	V_{DS}	30	V
Gate -Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	16	A
Drain Current-Continuous($T_C=100^\circ\text{C}$)	I_D	6	A
Pulsed Drain Current ^(Note 1)	I_{DM}	50	A
Maximum Power Dissipation	P_D	2.5	W

Internal Structure



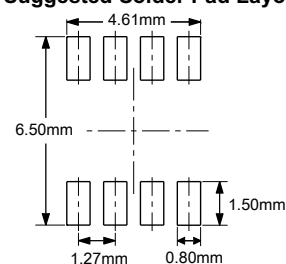
N-Channel Enhancement Mode Field Effect Transistor

SOP-8



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.053	0.069	1.35	1.75	
B	0.004	0.010	0.10	0.25	
C	0.053	0.061	1.35	1.55	
D	0.013	0.020	0.33	0.51	
E	0.007	0.010	0.17	0.25	
F	0.185	0.200	4.70	5.10	
G	0.050		1.270		TYP.
H	0.228	0.244	5.80	6.20	
J	0.150	0.157	3.80	4.00	
K	0.016	0.050	0.40	1.27	
θ	0°	8°	0°	8°	

Suggested Solder Pad Layout



ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	30	33		V
Gate-Threshold Voltage ^(Note3)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.0	1.6	3.0	V
Gate-Body Leakage Current	I _{GSS}	V _{GS} =± 20V, V _{DS} =0V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	μA
Drain-Source On-Resistance ^(Note3)	R _{DS(on)}	V _{GS} =10V, I _D =10A		8.0	12	mΩ
		V _{GS} =4.5V, I _D =5.0A		11	16	
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =10A	15			S
Dynamic Characteristics ^(Note4)						
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1MHz		1550		pF
Output Capacitance	C _{oss}			300		
Reverse Transfer Capacitance	C _{rss}			180		
Switching Characteristics ^(Note4)						
Turn-On Delay Time	t _{d(on)}	V _{DD} =25V, V _{GS} =10V, I _D =1A , R _{GEN} =6Ω		30		ns
Turn-On Rise Time	t _r			20		
Turn-Off Delay Time	t _{d(off)}			100		
Turn-Off Fall Time	t _f			80		
Total Gate Charge	Q _g	V _{DS} =15V, I _D =10A, V _{GS} =5.0V		13		nC
Gate-Source Charge	Q _{gs}			5.5		
Gate-Drain Charge	Q _{gd}			3.5		
Source-Drain Diode characteristics						
Drain-Source Diode Forward Current ^(Note2)	I _S				16	A
Diode Forward voltage ^(Note3)	V _{SD}	V _{GS} =0V, I _S =10A			1.2	V

Notes:

- 1.Repetitive Rating: Pulse width limited by maximum junction temperature.
- 2.Surface Mounted on FR4 Board, $t \leq 10$ sec.
- 3.Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
- 4.Guaranteed by design, not subject to production

Curve Characteristics

Fig. 1 - Output Characteristics

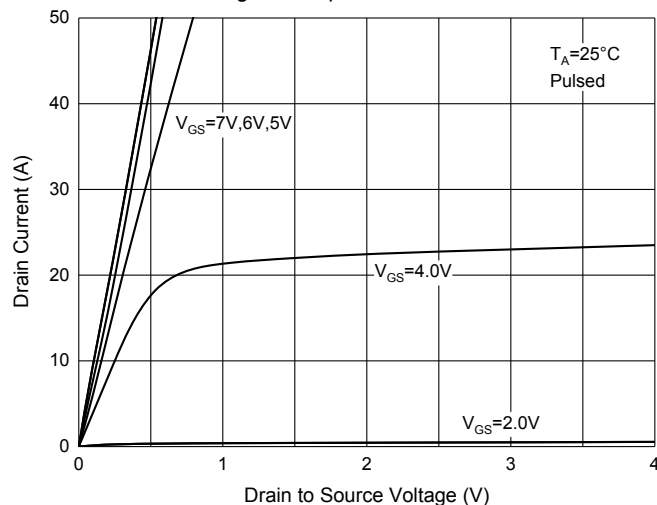


Fig. 2 - Transfer Characteristics

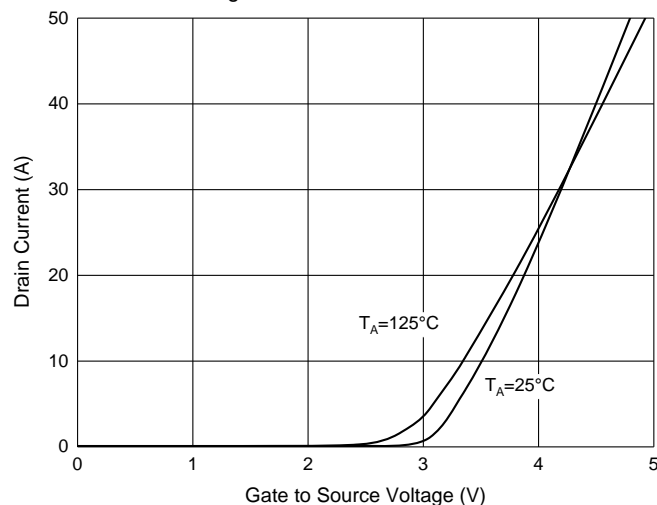


Fig. 3 - $R_{DS(ON)} - I_D$

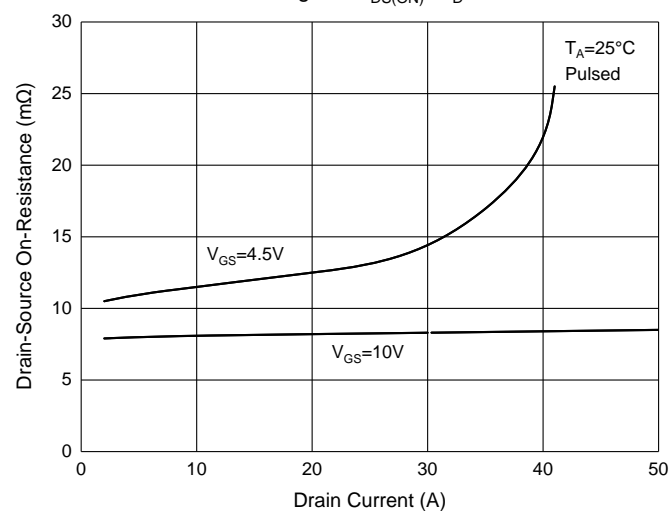


Fig. 4 - $I_S - V_{SD}$

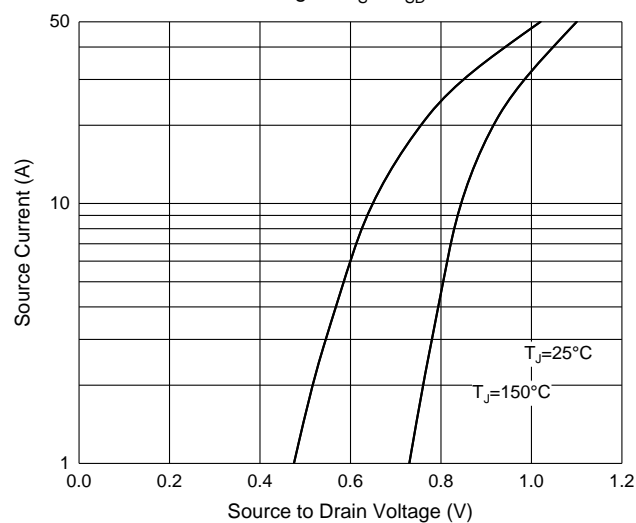


Fig. 5 - Threshold Voltage

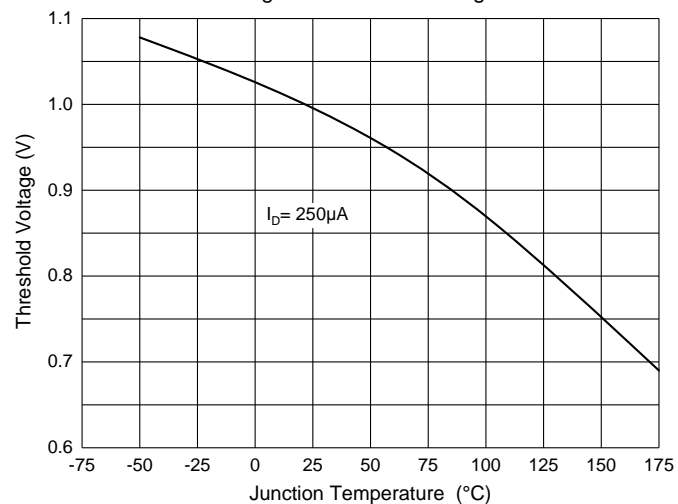
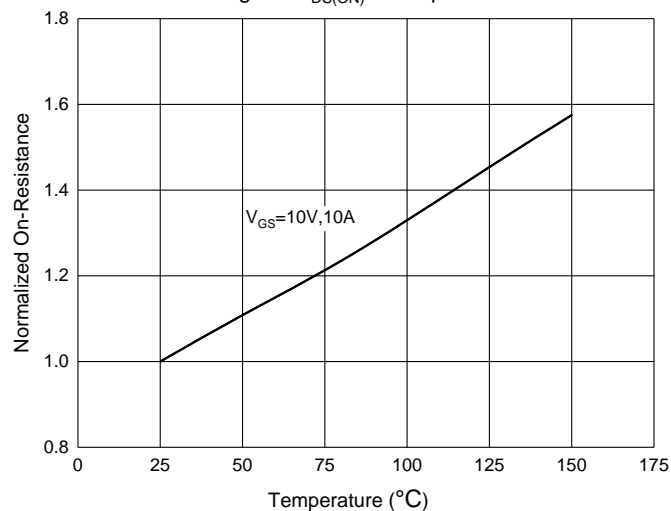


Fig. 6 - $R_{DS(ON)} - \text{Temperature}$



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:4Kpcs/Reel

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF

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