N-CHANNEL MOSFET

Features

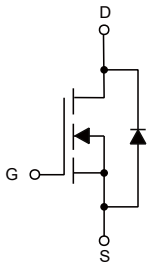
- High Current Rating
- Lower $R_{DS(ON)}$
- Lower Capacitance
- Lower Total Gate Charge
- Tighter V_{SD} Specifications
- Avalanche Energy Specified
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS 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: 100°C/W Junction to Ambient

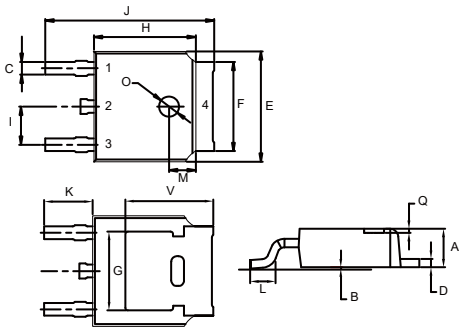
Parameter	Symbol	Rating	Unit
Drain -Source Voltage	V_{DS}	600	V
Gate -Source Volltage	V_{GS}	±30	V
Drain Current-Continuous	I_D	4.0	A
Continuous Drain-Source Diode Forward Current	I_S	4.0	A
Power Dissipation	P_D	1.25	W
Single Pulsed Avalanche Energy(Note1)	E_{AS}	260	mJ

Internal Structure



1.GATE
2.DRAIN
3.SOURCE
4.DRAIN

DPAK



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.087	0.094	2.20	2.40	
B	0.000	0.005	0.00	0.13	
C	0.026	0.034	0.66	0.86	
D	0.018	0.023	0.46	0.58	
E	0.256	0.264	6.50	6.70	
F	0.201	0.215	5.10	5.46	
G	0.190		4.83		TYP.
H	0.236	0.244	6.00	6.20	
I	0.086	0.094	2.18	2.39	
J	0.386	0.409	9.80	10.40	
K	0.114		2.90		TYP.
L	0.055	0.067	1.40	1.70	
M	0.063		1.60		TYP.
O	0.043	0.051	1.10	1.30	
Q	0.000	0.012	0.00	0.30	
V	0.211		5.35		TYP.

ELECTRICAL CHARACTERISTICS (Ta=25℃ 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	600			V
Gate-Threshold Voltage(Note2)	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2.0		4.0	V
Gate-Body Leakage Current(Note2)	I_{GSS}	V_{GS} =± 30V, V_{DS} =0V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =600V, V_{GS} =0V			25	μA
Drain-Source On-Resistance(Note2)	$R_{DS(on)}$	V_{GS}=10V, I_D=2A		2	3	Ω
Drain- Source Diode Forward Voltage(Note2)	V_{SD}	V_{GS} =0V, I_S =4A			1.5	V
Forward Transconductance(Note2)	g_{fs}	V_{DS}=50V, I_D=2A	2.5			S
Dynamic Characteristics						
Input Capacitance(Note3)	C_{iss}	V_{DS}=25V,V_{GS}=0V, f=1MHz		540	760	pF
Output Capacitance(Note3)	C_{oss}			125	180	
Reverse Transfer Capacitance(Note3)	C_{rss}			8	20	
Switching Characteristics						
Total Gate Charge	Q_g	V_{DS}=480V,V_{GS}=10V,I_D=4A		5	10	Nc
Gate-Source Charge	Q_{gs}			2.7		
Gate-Drain Charge	Q_{gd}			2		
Turn-on Delay Time(Note3)	$t_{d(on)}$	V_{DD}=300V,V_{GS}=10V,R_G=9.1Ω, I_D=4A		12	20	ns
Turn-on Rise Time(Note3)	t_r			7	10	
Turn-off Delay Time(Note3)	$t_{d(off)}$			19	40	
Turn-off Fall Time(Note3)	t_f			10	20	

Note: 1. L=30mH, I_L=4A,V_{DD}=100V,V_{GS}=10V,R_G=25Ω,Starting T_J=25°C

2. Pulse Test : Pulse Width≤300μs, Duty Cycle≤2%

3. These Parameters Have No Way to Verify

Curve Characteristics

Fig. 1 - Output Characteristics

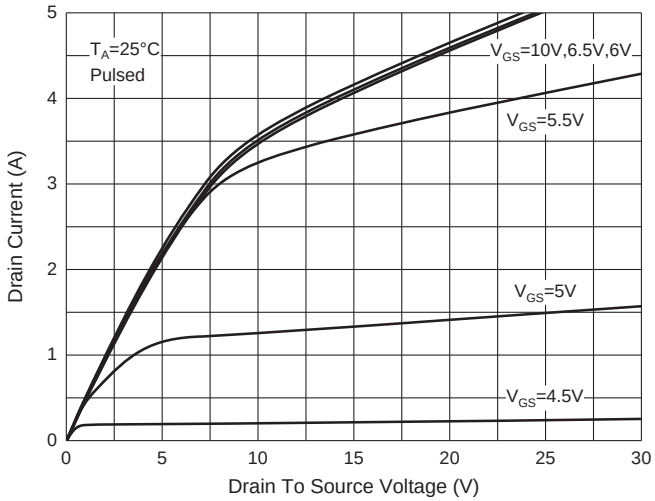


Fig. 2 - Transfer Characteristics

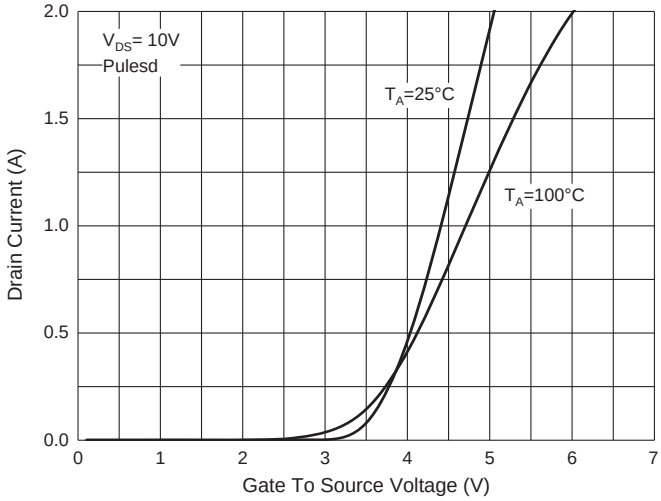


Fig. 3 - $R_{DS(ON)}$—I_D

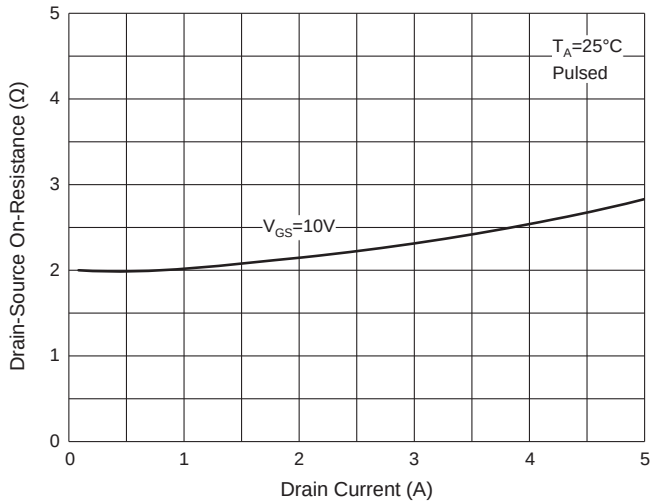


Fig. 4 - $R_{DS(ON)}$—V_{GS}

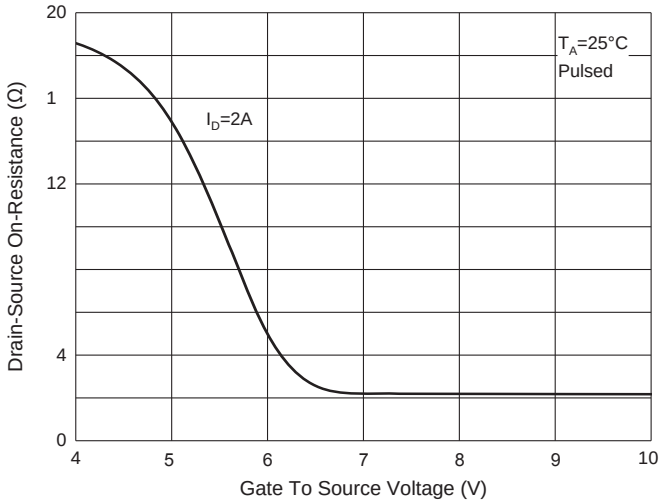


Fig. 5 - I_S—V_{SD}

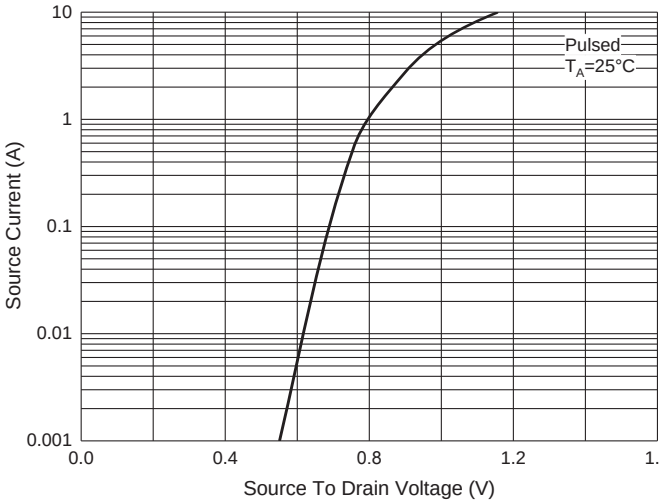
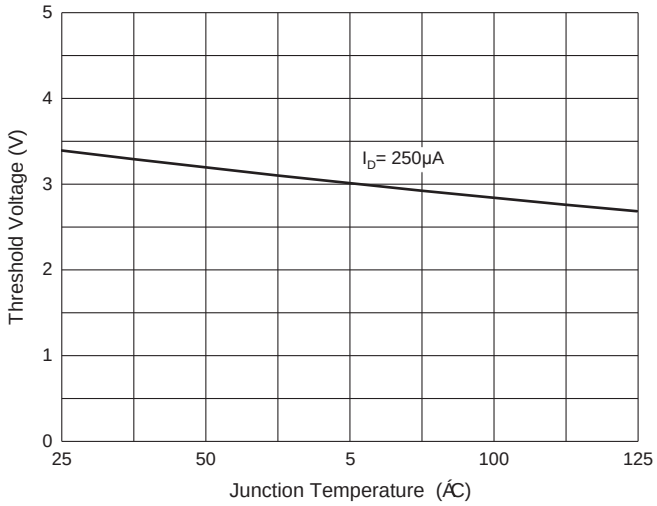


Fig.6 - Threshold Voltage



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:2.5Kpcs/Reel

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

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