

### Features

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

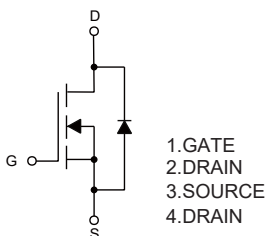
### Maximum Ratings

- Operating Junction Temperature Range : -55°C to +175°C
- Storage Temperature Range : -55°C to +175°C
- Thermal Resistance : 1.76°C/W Junction to Case

Parameter	Symbol	Value	
Drain-source Voltage	$V_{DS}$	60V	
Gate-source Voltage	$V_{GS}$	±20V	
Drain Current	$I_D$	$T_C=25^\circ\text{C}$	80A
		$T_C=100^\circ\text{C}$	56A
Pulsed Drain Current	$I_{DM}$	240A	
Power Dissipation	$P_D$	68W	
Single Pulsed Avalanche Energy <sup>(1)</sup>	$E_{AS}$	225mJ	

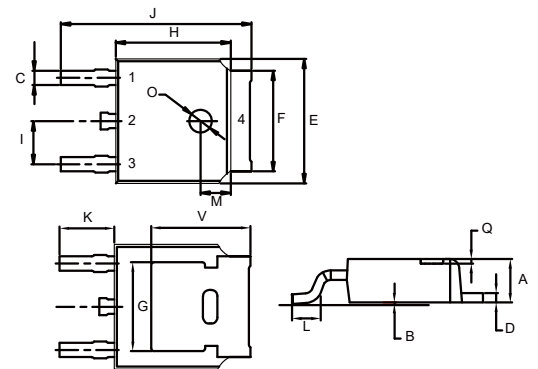
Note: 1.  $E_{AS}$  Condition:  $T_j=25^\circ\text{C}$ ,  $V_{DD}=30\text{V}$ ,  $V_G=10\text{V}$ ,  $L=0.5\text{mH}$ ,  $R_g=25\Omega$

### Internal Structure



## N-CHANNEL MOSFET

### DPAK



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°C unless otherwise specified)**

Parameter	Symbol	Condition	Min	Typ	Max	Unit
<b>Off Characteristics</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	60	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V$	-	-	1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	$\pm 100$	nA
<b>On Characteristics</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.2	1.7	2.2	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=30A$	-	6.6	8	m $\Omega$
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=30A$	-	9.3	11	m $\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS}=5V, I_D=30A$	30	-	-	S
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=30V, V_{GS}=0V,$ $F=1.0MHz$	-	1990	-	PF
Output Capacitance	$C_{oss}$		-	470	-	PF
Reverse Transfer Capacitance	$C_{rss}$		-	14	-	PF
<b>Switching Characteristics</b>						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=30V, I_D=2A, R_L=1\Omega$ $V_{GS}=10V, R_{GEN}=3\Omega$	-	16	-	nS
Turn-on Rise Time	$t_r$		-	8	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	45	-	nS
Turn-Off Fall Time	$t_f$		-	33	-	nS
Total Gate Charge	$Q_g$	$V_{DS}=30V, I_D=20A,$ $V_{GS}=10V$	-	31	-	nC
Gate-Source Charge	$Q_{gs}$		-	6	-	nC
Gate-Drain Charge	$Q_{gd}$		-	5	-	nC
<b>Drain-Source Diode Characteristics</b>						
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=30A$	-	-	1.2	V
Diode Forward Current	$I_S$		-	-	80	A
Reverse Recovery Time	$t_{rr}$	$T_J = 25^\circ C, I_F = 30A$ $di/dt = 100A/\mu s$	-	35		nS
Reverse Recovery Charge	$Q_{rr}$		-	47		nC
Forward Turn-On Time	$t_{on}$	Intrinsic turn-on time is negligible (turn-on is dominated by LS+LD)				

Curve Characteristics

Fig. 1-Output Characteristics

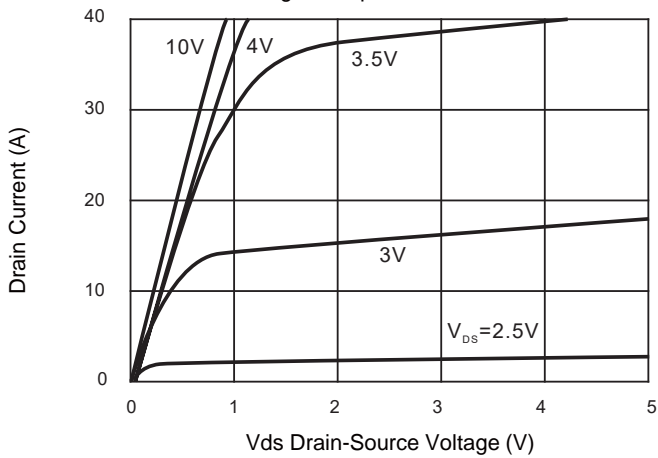


Fig. 2-Rdson-JunctionTemperature

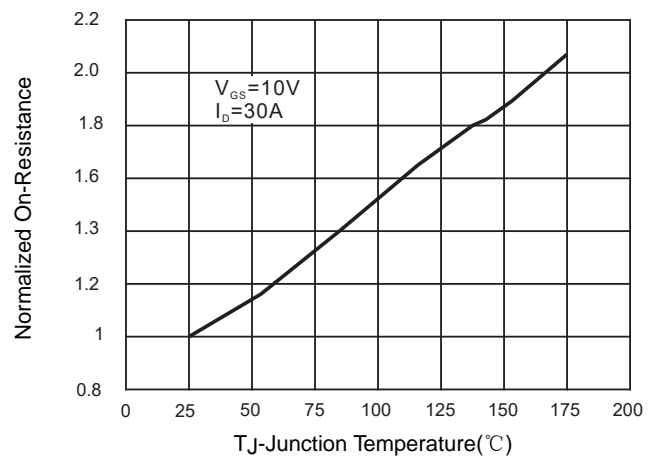


Fig. 3-Transfer Characteristics

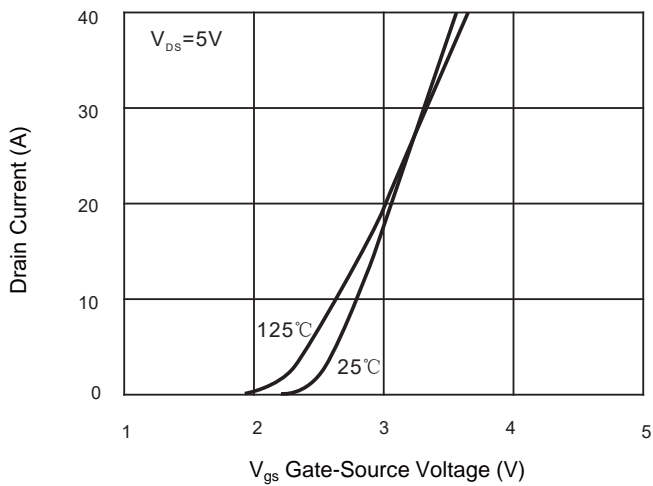


Fig. 4 - Total Gate Charge Characteristics

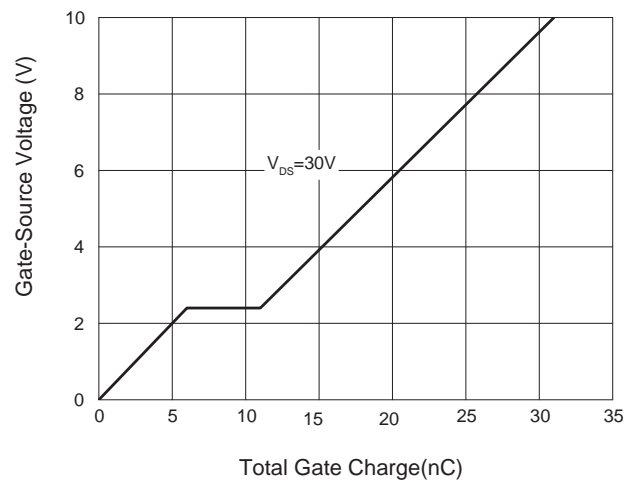


Fig. 5-Rdson- Drain Current

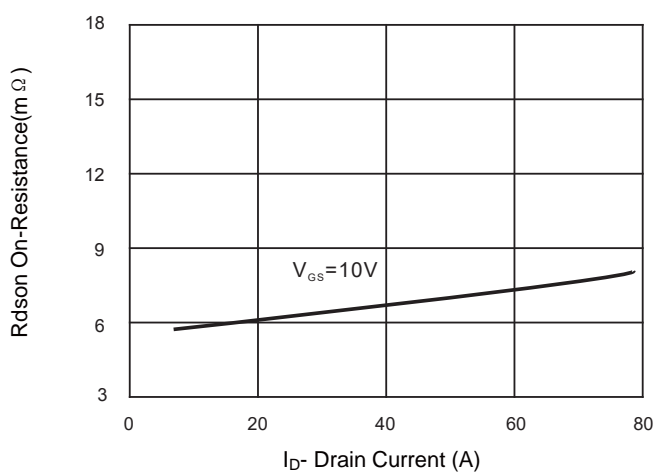
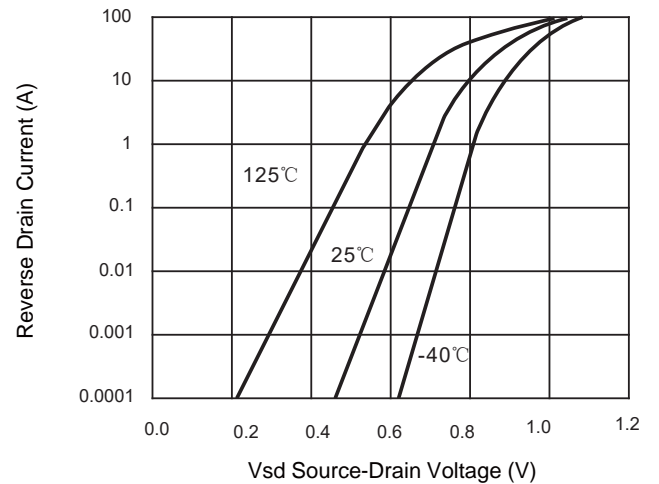


Fig. 6-Source- Drain Diode Forward



## 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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