

Features

- High Density Cell Desihn for Ultra Low $R_{DS(on)}$
- Fully Characterized Avalanche Voltage and Current
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

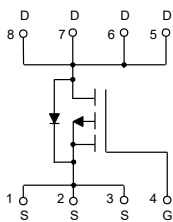
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 6.25°C/W Junction to Case^(Note 2)

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	-30	V	
Gate-Source Voltlage	V_{GS}	±12	V	
Continuous Drain Current	I_D	$T_C=25^\circ C$	-10	A
		$T_C=100^\circ C$	-7.5	A
Pulsed Drain Current ^(Note 3)	I_{DM}	-40	A	
Single Pulse Avalanche Energy ^(Note 4)	E_{AS}	75	mJ	
Total Power Dissipation	P_D	20	W	

Note:

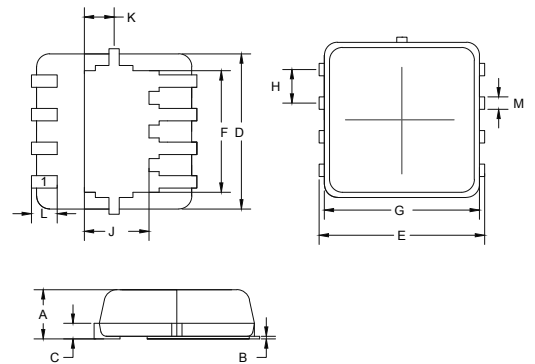
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Width Limited by Maximum Junction Temperature.
4. EAS Condition: $T_J=25^\circ C, V_{DD}=-15V, V_G=-4.5V, L=0.5mH, R_g=25\Omega$.

Internal Structure



P-CHANNEL MOSFET

DFN3030



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.028	0.035	0.70	0.90	
B	0.000	0.002	0.00	0.05	
C	0.004	0.010	0.10	0.25	
D	0.118		3.00		TYP.
E	0.126		3.20		TYP.
F	0.093		2.35		TYP.
G	0.118		3.00		VYUË
H	0.026		0.65		VYUË
J	0.069		1.75		VYUË
K	0.023		0.575		VYUË
L	0.012	0.020	0.30	0.50	
M	0.009	0.014	0.24	0.35	

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$		-33		V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 12V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30V, V_{GS}=0V$			-1	μA
Gate-Threshold Voltage ^(Note 5)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.6	-0.9	-1.5	V
Drain-Source On-Resistance ^(Note 5)	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-10A$		20	26	m Ω
		$V_{GS}=-2.5V, I_D=-5A$		28	38	
Forward Transconductance ^(Note 5)	g_{FS}	$V_{DS}=-15V, I_D=-10A$	10			S
Dynamic Characteristics^(Note 6)						
Input Capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$		1550		pF
Output Capacitance	C_{oss}			260		
Reverse Transfer Capacitance	C_{rss}			190		
Total Gate Charge	Q_g	$V_{DS}=-15V, V_{GS}=-4.5V, I_D=-10A$		27		nC
Gate-Source Charge	Q_{gs}			6		
Gate-Drain Charge	Q_{gd}			7		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-15V, I_D=-1A$ $V_{GS}=-4.5V, R_{GEN}=6\Omega$		10		ns
Turn-On Rise Time	t_r			15		
Turn-Off Delay Time	$t_{d(off)}$			110		
Turn-Off Fall Time	t_f			70		
Drain-Source Body Diode Characteristics						
Continuous Body Diode Current	I_S				-10	A
Body Diode Voltage	V_{SD}	$I_{SD}=-10A, V_{GS}=0V$		-0.87	-0.99	V
Reverse Recovery Time	t_{rr}	$T_J=25^\circ C, I_F=-10A, di/dt=100A/\mu s$		23	33	ns
Reverse Recovery Charge	Q_{rr}			12	20	nC
Forward Turn-On Time	t_{on}	Intrinsic Turn-On Time is Negligible (Turn-On is Dominated by LS+LD)				

Note :

5. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

6. Guaranteed by Design, Not Subject to Production Testing.

Curve Characteristics

Fig. 1 - Output Characteristics

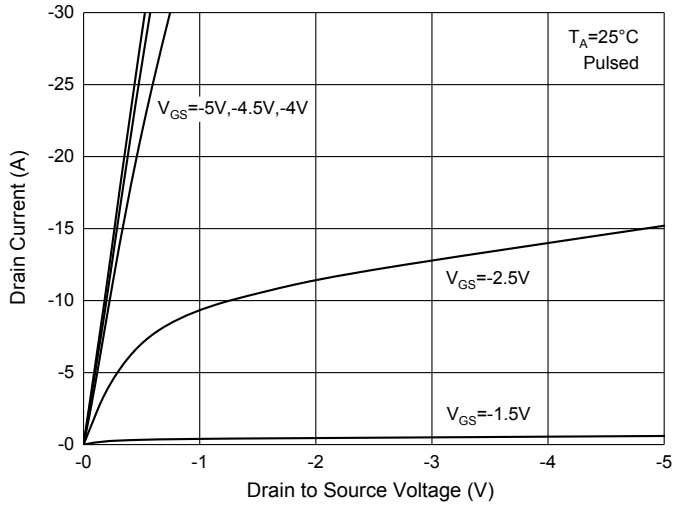


Fig. 2 - Transfer Characteristics

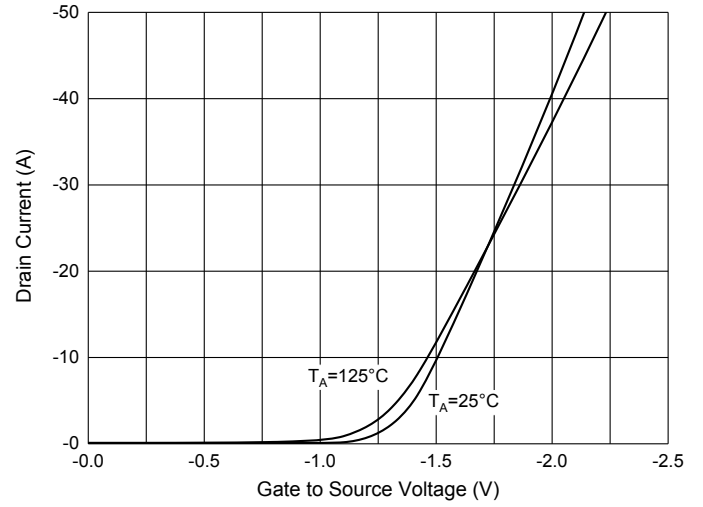


Fig. 3 - Gate Charge

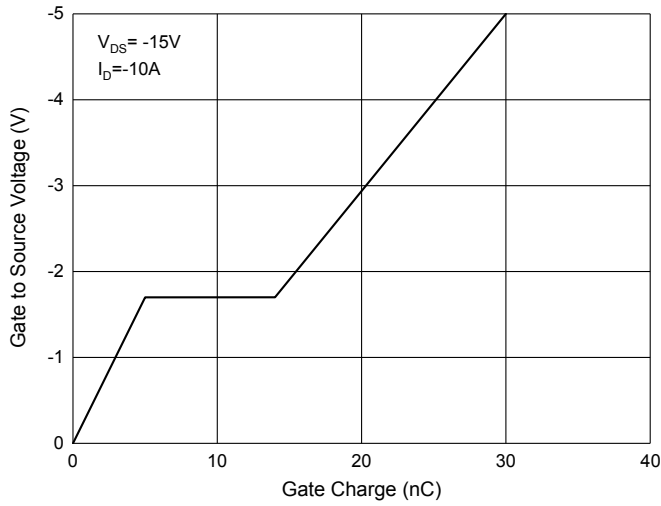


Fig. 4 - $R_{DS(ON)}$ —Temperature

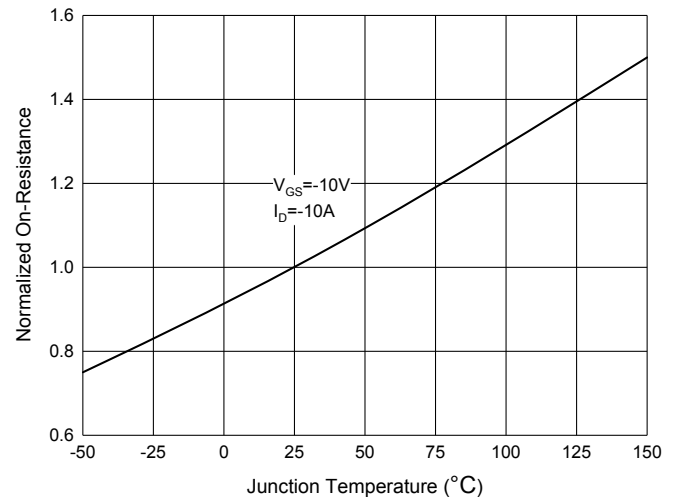


Fig. 5 - $R_{DS(ON)}$ — I_D

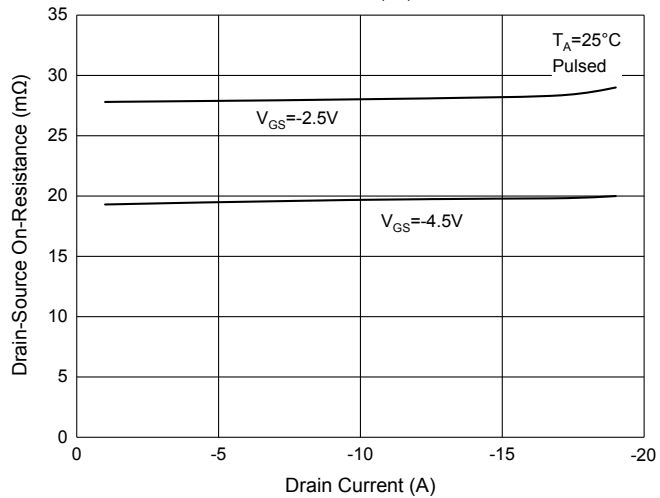
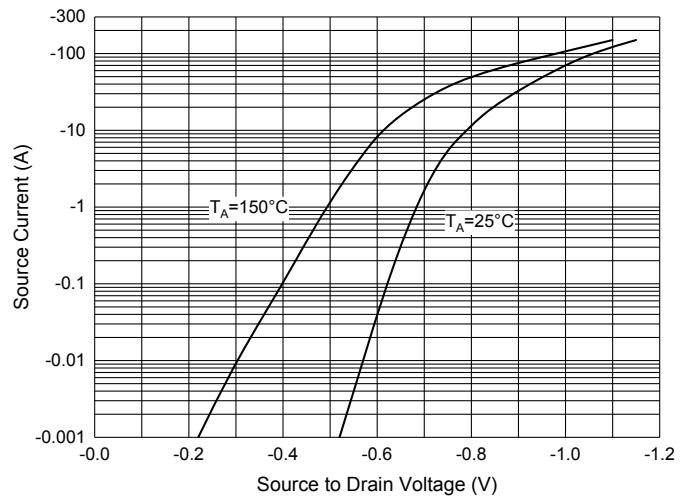


Fig. 6 - I_S — V_{SD}



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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