

## 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

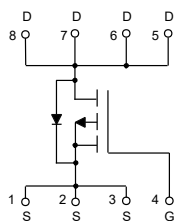
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 3.57°C/W Junction to Case<sup>(Note 2)</sup>

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V <sub>DS</sub>	-30	V
Gate-Source Voltlage		V <sub>GS</sub>	±20	V
Continuous Drain Current	T <sub>C</sub> =25°C	I <sub>D</sub>	-16	A
	T <sub>C</sub> =100°C		-12	A
Pulsed Drain Current <sup>(Note 3)</sup>		I <sub>DM</sub>	-80	A
Single Pulse Avalanche Energy <sup>(Note 4)</sup>		E <sub>AS</sub>	90	mJ
Total Power Dissipation		P <sub>D</sub>	35	W

### Note:

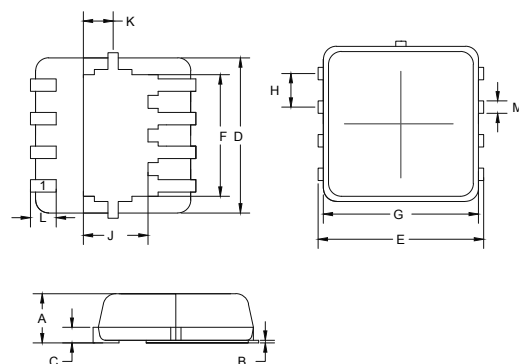
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Surface Mounted on FR4 Board,  $t \leq 10$  sec.
3. Pulse Width Limited by Maximum Junction Temperature.
4. EAS Condition:  $T_J=25^\circ\text{C}$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

## Internal Structure



## P-CHANNEL MOSFET

### DFN3030



DIMENSIONS					
DIM	INCHES		MM		NOTE
	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		VÝÚÈ
H	0.026		0.65		VÝÚÈ
J	0.069		1.75		VÝÚÈ
K	0.023		0.575		VÝÚÈ
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 <sub>(BR)DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =-250μA	-30	-33		V
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V			-1	μA
Gate-Threshold Voltage <sup>(Note 5)</sup>	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250μA	-1	-1.5	-1.9	V
Drain-Source On-Resistance <sup>(Note 5)</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-15A		10.6	15	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-15A		16.3	25	
Forward Tranconductance <sup>(Note 5)</sup>	g <sub>FS</sub>	V <sub>DS</sub> =-5V, I <sub>D</sub> =-15A	15			S
Dynamic Characteristics <sup>(Note 6)</sup>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-25V, V <sub>GS</sub> =0V, f=1MHz		2130		pF
Output Capacitance	C <sub>oss</sub>			302		
Reverse Transfer Capacitance	C <sub>rss</sub>			227		
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-15V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-20A		45.6		nC
Gate-Source Charge	Q <sub>gs</sub>			4.6		
Gate-Drain Charge	Q <sub>gd</sub>			11.1		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> =-15V, I <sub>D</sub> =-15A V <sub>GS</sub> =-10V, R <sub>GEN</sub> =1Ω		12		ns
Turn-On Rise Time	t <sub>r</sub>			10		
Turn-Off Delay Time	t <sub>d(off)</sub>			25		
Turn-Off Fall Time	t <sub>f</sub>			13		
Drain-Source Body Diode Characteristics						
Body Diode Voltage <sup>(Note 5)</sup>	V <sub>SD</sub>	I <sub>SD</sub> =-30A, V <sub>GS</sub> =0V			-1.2	V

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

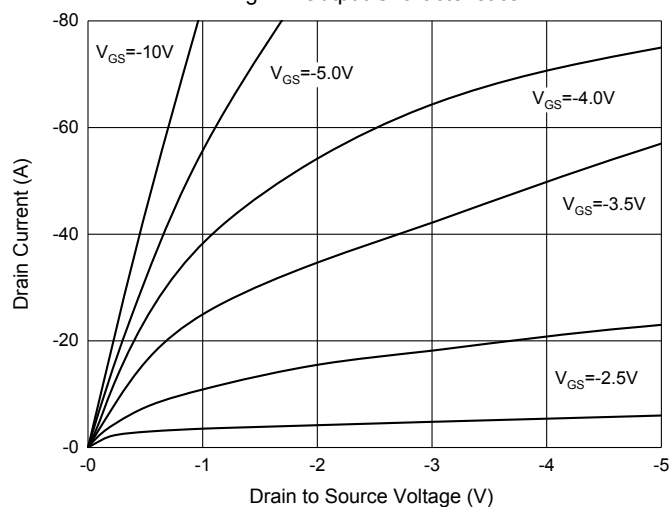


Fig. 2 - Transfer Characteristics

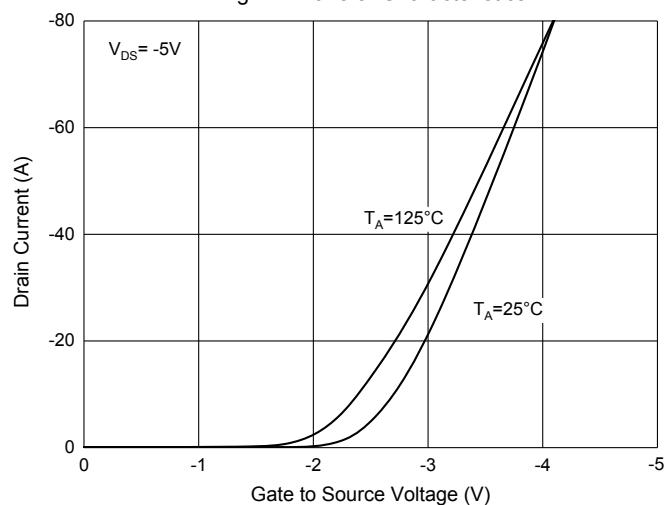


Fig. 3 -  $R_{DS(ON)} - I_D$

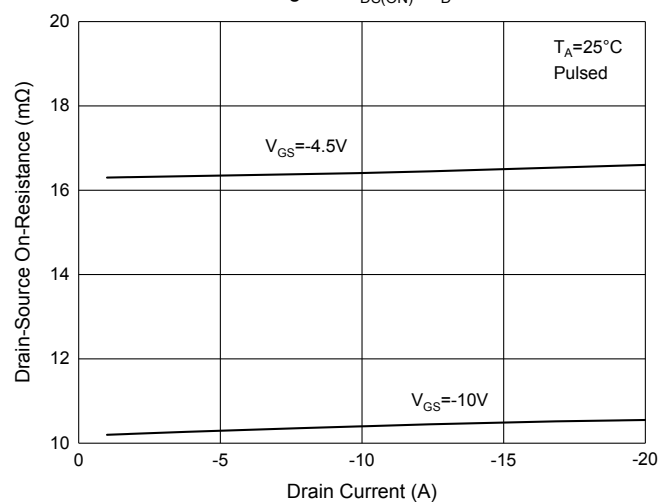


Fig. 4 - Gate Charge

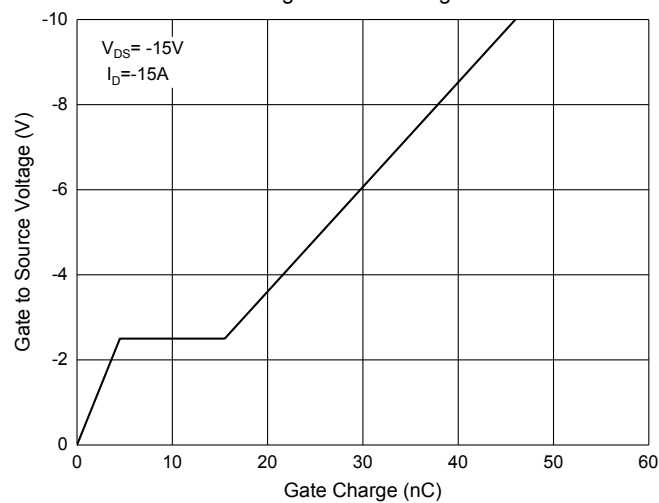


Fig. 5 -  $R_{DS(ON)} - V_{GS}$

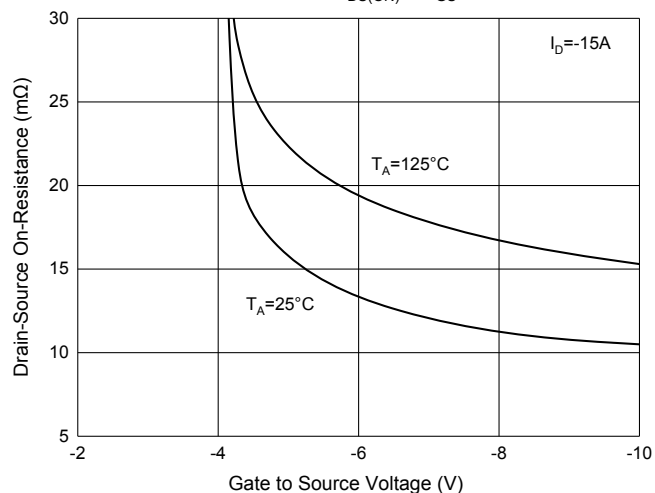
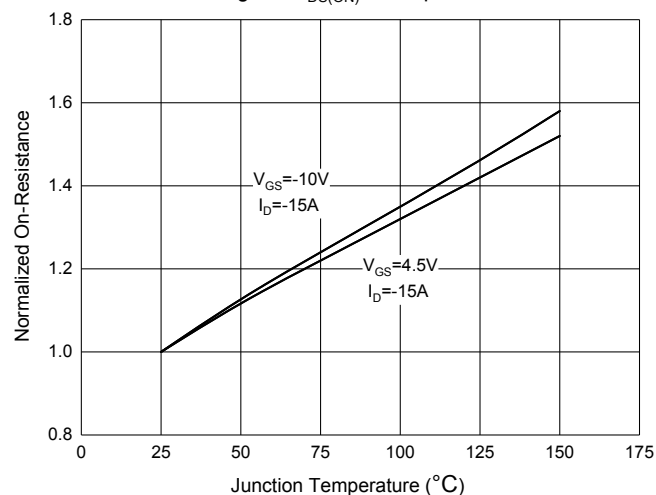


Fig. 6 -  $R_{DS(ON)} - \text{Temperature}$



## Ordering Information

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

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