

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

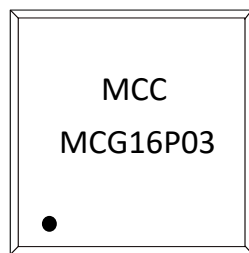
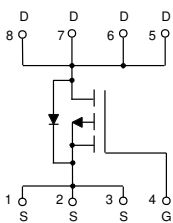
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 3.57°C/W Junction to Case^(Note 2)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltlage	V_{GS}	±20	V
Continuous Drain Current	I_D	$T_C=25^\circ C$	-16 A
		$T_C=100^\circ C$	-12 A
Pulsed Drain Current ^(Note 3)	I_{DM}	-80	A
Single Pulse Avalanche Energy ^(Note 4)	E_{AS}	90	mJ
Total Power Dissipation	P_D	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: $T_J=25^\circ C, V_{DD}=-15V, V_G=-4.5V, L=0.5mH, R_g=25\Omega$.

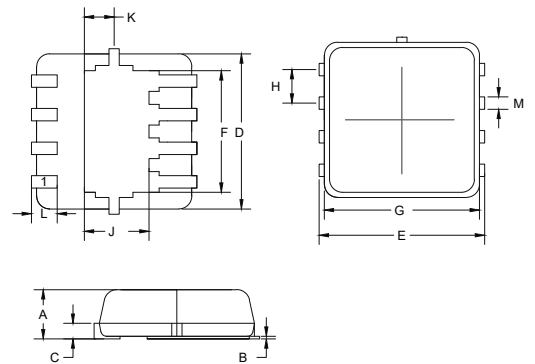
Internal Structure and Marking Code



Pin1

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		TYP.
H	0.026		0.65		TYP.
J	0.069		1.75		TYP.
K	0.023		0.575		TYP.
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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30	-33		V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30V, V_{GS}=0V$			-1	μA
Gate-Threshold Voltage ^(Note 5)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-1.5	-1.9	V
Drain-Source On-Resistance ^(Note 5)	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-15A$		10.6	15	m Ω
		$V_{GS}=-4.5V, I_D=-15A$		16.3	25	
Forward Transconductance ^(Note 5)	g_{FS}	$V_{DS}=-5V, I_D=-15A$	15			S
Dynamic Characteristics^(Note 6)						
Input Capacitance	C_{iss}	$V_{DS}=-25V, V_{GS}=0V, f=1MHz$		2130		pF
Output Capacitance	C_{oss}			302		
Reverse Transfer Capacitance	C_{rss}			227		
Total Gate Charge	Q_g	$V_{DS}=-15V, V_{GS}=-10V, I_D=-20A$		45.6		nC
Gate-Source Charge	Q_{gs}			4.6		
Gate-Drain Charge	Q_{gd}			11.1		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-15V, I_D=-15A$ $V_{GS}=-10V, R_{GEN}=1\Omega$		12		ns
Turn-On Rise Time	t_r			10		
Turn-Off Delay Time	$t_{d(off)}$			25		
Turn-Off Fall Time	t_f			13		
Drain-Source Body Diode Characteristics						
Body Diode Voltage ^(Note 5)	V_{SD}	$I_{SD}=-30A, V_{GS}=0V$			-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

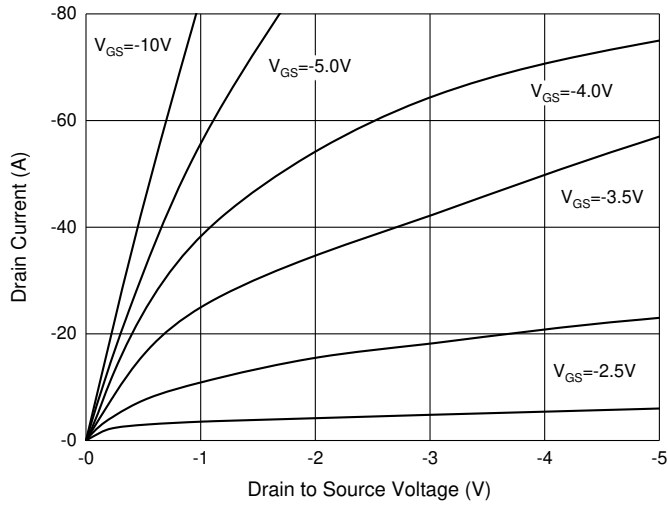


Fig. 2 - Transfer Characteristics

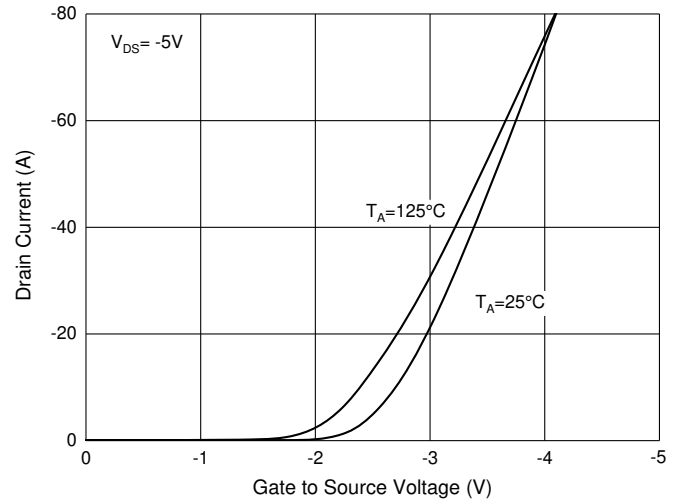


Fig. 3 - $R_{DS(ON)} - I_D$

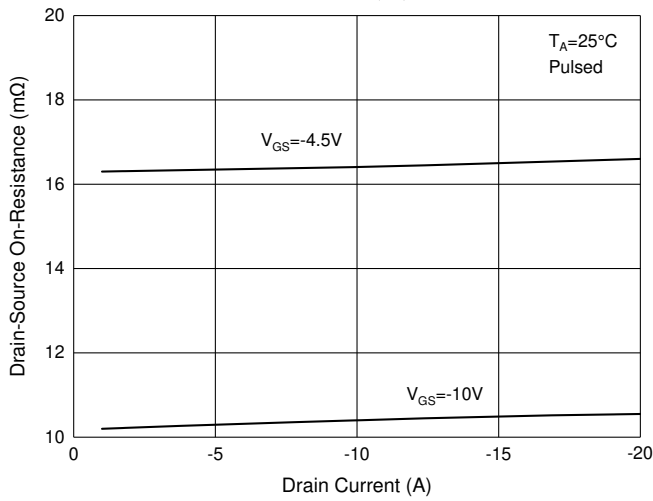


Fig. 4 - Gate Charge

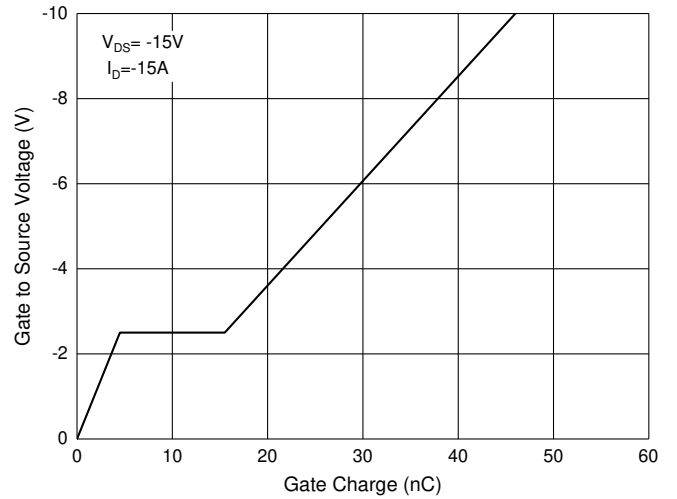


Fig. 5 - $R_{DS(ON)} - V_{GS}$

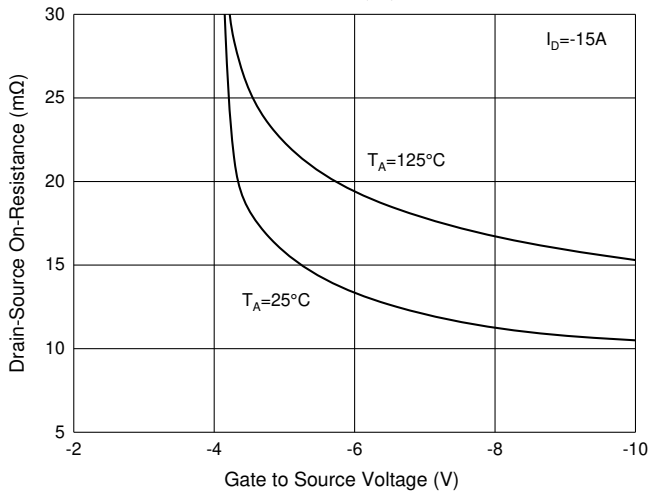
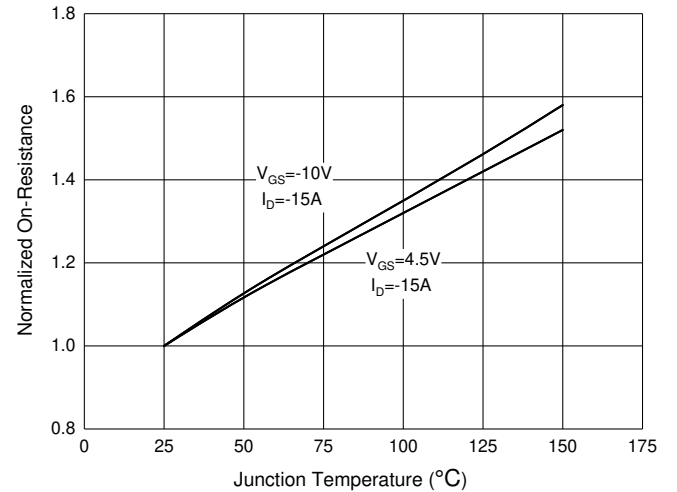


Fig. 6 - $R_{DS(ON)} - \text{Temperature}$



Ordering Information

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

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