

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

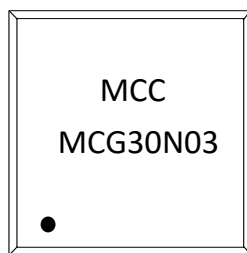
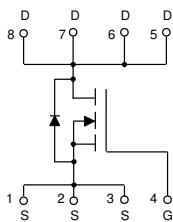
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 5°C/W Junction to Case^(Note 2)

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	30	V	
Gate-Source Voltlage	V_{GS}	±20	V	
Continuous Drain Current	I_D	$T_C=25^\circ C$	30	A
		$T_C=100^\circ C$	21	A
Pulsed Drain Current ^(Note 3)	I_{DM}	60	A	
Single Pulse Avalanche Energy ^(Note 4)	E_{AS}	70	mJ	
Total Power Dissipation	P_D	25	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, $t_s \leq 10$ sec.
3. Pulse Width Limited by Maximum Junction Temperature.
4. EAS Condition: $T_J=25^\circ C, V_{DD}=15V, V_G=10V, L=0.1mH, R_g=25\Omega$.

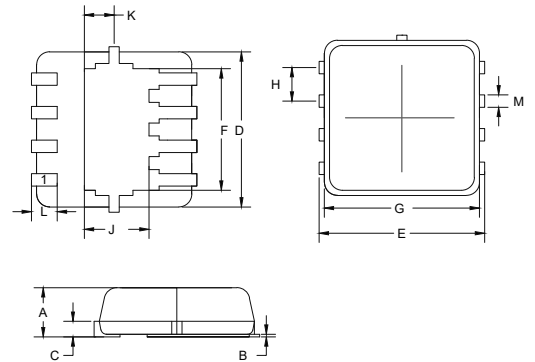
Internal Structure and Marking Code



Pin1

**N-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	2.3	V
Drain-Source On-Resistance ^(Note 5)	$R_{DS(on)}$	$V_{GS}=10V, I_D=10A$		6.3	9	m Ω
		$V_{GS}=4.5V, I_D=10A$		9.2	13	
Forward Transconductance ^(Note 5)	g_{FS}	$V_{DS}=5V, I_D=20A$	15			S
Dynamic Characteristics^(Note 6)						
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V, f=1MHz$		1490		pF
Output Capacitance	C_{oss}			220		
Reverse Transfer Capacitance	C_{rss}			135		
Total Gate Charge	Q_g	$V_{DS}=15V, V_{GS}=10V, I_D=9A$		15		nC
Gate-Source Charge	Q_{gs}			3		
Gate-Drain Charge	Q_{gd}			4.5		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=15V, I_D=10A$ $V_{GS}=10V, R_{GEN}=1.8\Omega$		10		ns
Turn-On Rise Time	t_r			8		
Turn-Off Delay Time	$t_{d(off)}$			30		
Turn-Off Fall Time	t_f			5		
Drain-Source Body Diode Characteristics						
Continuous Body Diode Current	I_S				25	A
Body Diode Voltage	V_{SD}	$I_{SD}=10A, V_{GS}=0V$		0.85	1.2	V
Reverse Recovery Time	t_{rr}	$T_J=25^\circ C, I_F=10A, di/dt=100A/\mu s$		22	35	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

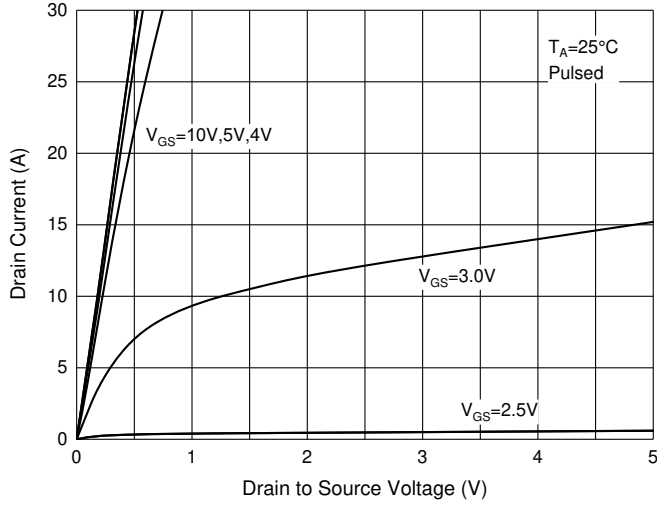


Fig. 2 - Transfer Characteristics

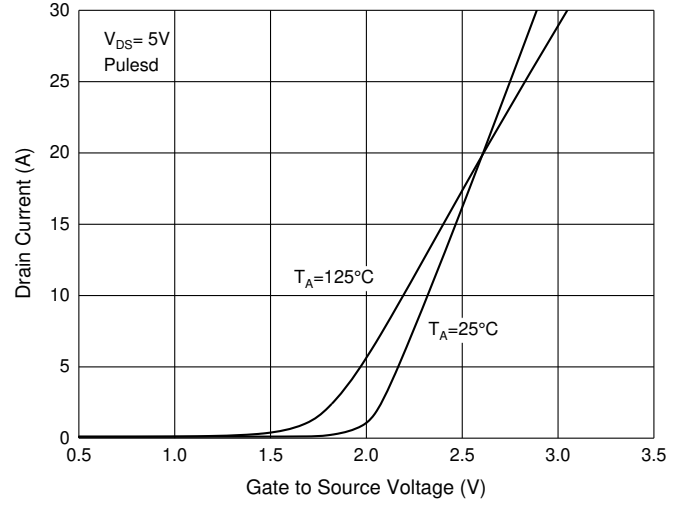


Fig. 3 - $R_{DS(ON)} - I_D$

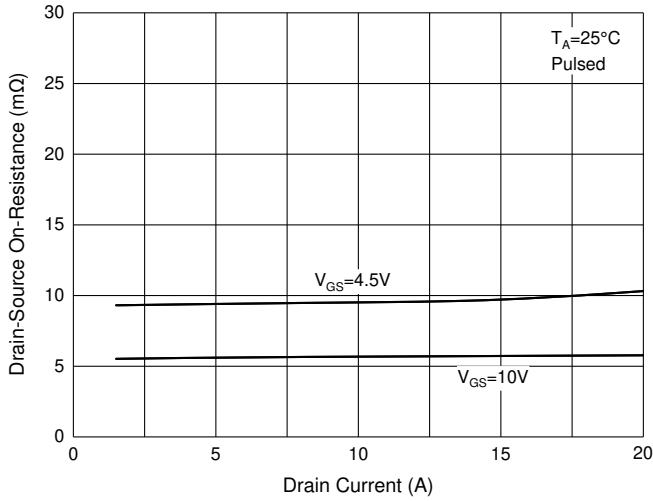


Fig. 4 - $I_S - V_{SD}$

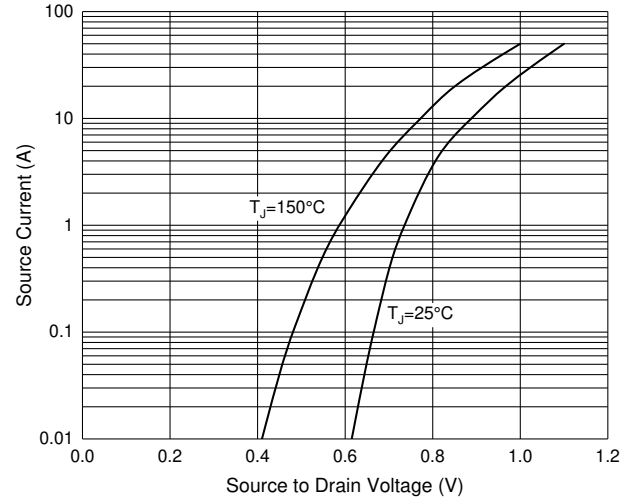


Fig. 5 - $R_{DS(ON)} - \text{Temperature}$

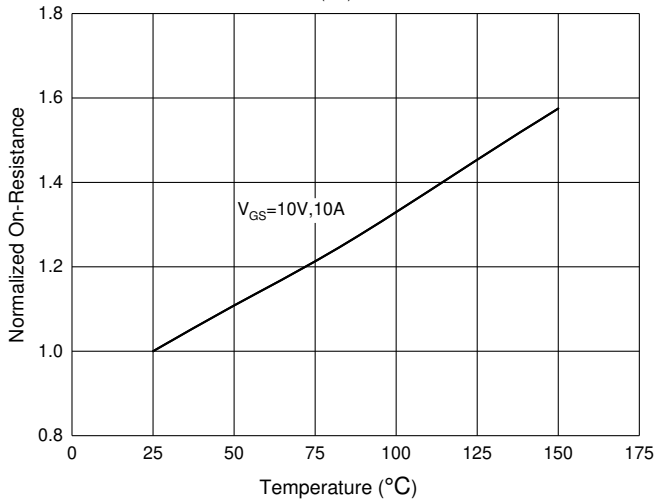
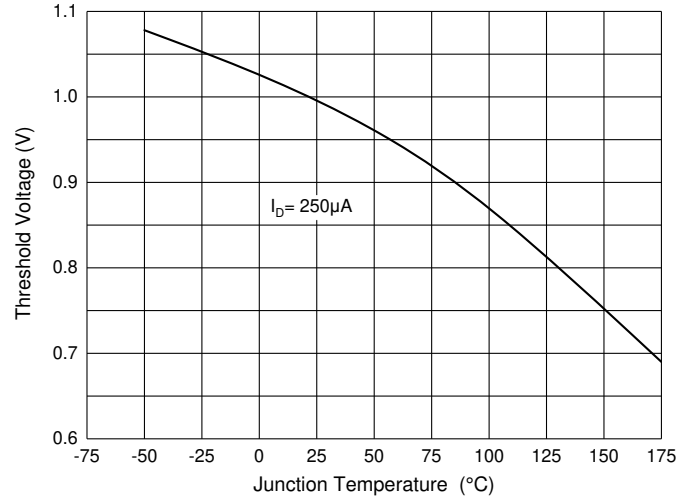


Fig. 6 - Threshold Voltage



Ordering Information

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

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