

**Features**

- Advanced Trench Cell Design
- Excellent Package for Heat Dissipation
- High Density Cell Design for Low  $R_{DS(on)}$
- 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)

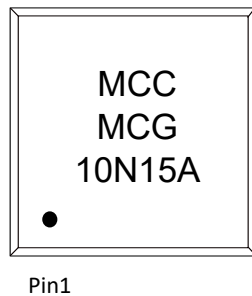
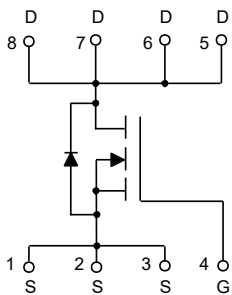
**Maximum Ratings**

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 6°C/W Junction to Case <sup>(Note 2)</sup>

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	150	V
Gate-Source Voltage	$V_{GS}$	±25	V
Continuous Drain Current	$I_D$	10	A
Pulsed Drain Current	$I_{DM}$	50	A
Total Power Dissipation	$P_D$	20.8	W

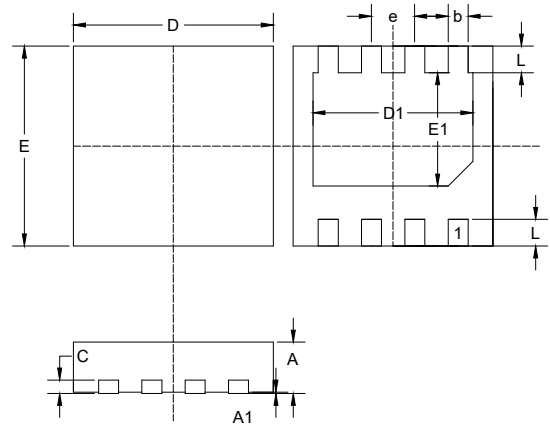
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.  
2. Surface Mounted on 1 in<sup>2</sup> Pad Area, t ≤ 10 sec.

**Internal Structure and Marking Code**



**N-CHANNEL MOSFET**

**DFN3030-8**



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.028	0.031	0.70	0.80	
A1	0.0008		0.02		TYP.
b	0.010	0.014	0.25	0.35	
c	0.007	0.012	0.18	0.30	
D	0.116	0.121	2.95	3.07	
E	0.116	0.121	2.95	3.07	
D1	0.091	0.098	2.30	2.50	
E1	0.063	0.071	1.60	1.80	
L	0.012	0.020	0.30	0.50	
e	0.026		0.65		TYP.

**Electrical Characteristics @ 25°C (Unless Otherwise Specified)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	150			V
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 25V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=120V, V_{GS}=0V$			1	$\mu A$
		$V_{DS}=60V, V_{GS}=0V, T_J=85^\circ C$			30	
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2		4	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=10A$		52	65	m $\Omega$
		$V_{GS}=6V, I_D=5A$		58	75	
<b>Diode Characteristics</b>						
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=10A$			1.3	V
Reverse Recovery Time	$t_{rr}$	$I_{DS}=4A, V_{GS}=0V$ $di_{SD}/dt=100A/\mu s$		64		ns
Reverse Recovery Charge	$Q_{rr}$			142		nC
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=75V, V_{GS}=0V, f=1MHz$		1182		pF
Output Capacitance	$C_{oss}$			67		
Reverse Transfer Capacitance	$C_{rss}$			25		
Total Gate Charge	$Q_g$	$V_{DS}=75V, V_{GS}=10V, I_D=10A$		22		nC
Gate-Source Charge	$Q_{gs}$			6.2		
Gate-Drain Charge	$Q_{gd}$			5.5		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=75V, V_{GEN}=10V,$ $R_G=4.5\Omega, R_L=25\Omega,$ $I_{DS}=10A$		6.5		ns
Turn-On Rise Time	$t_r$			19		
Turn-Off Delay Time	$t_{d(off)}$			16		
Turn-Off Fall Time	$t_f$			18		

**Curve Characteristics**

Fig. 1 - Typical Output Characteristics

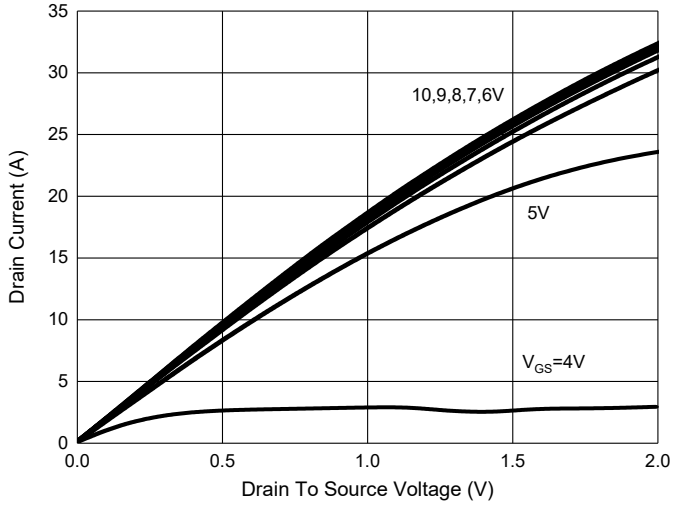


Fig. 2 -  $I_S - V_{SD}$

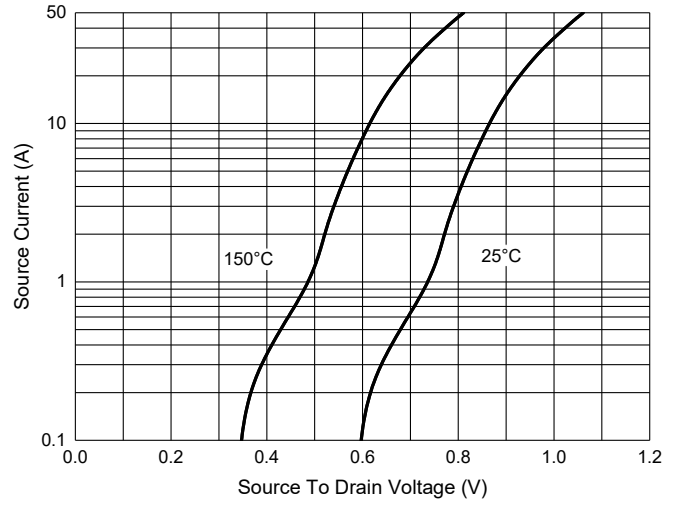


Fig. 3 -  $R_{DS(ON)} - I_D$

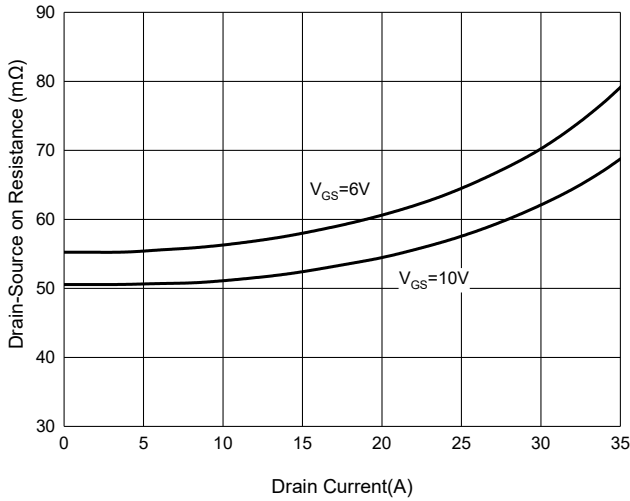


Fig. 4 - Normalized On Resistance Characteristics

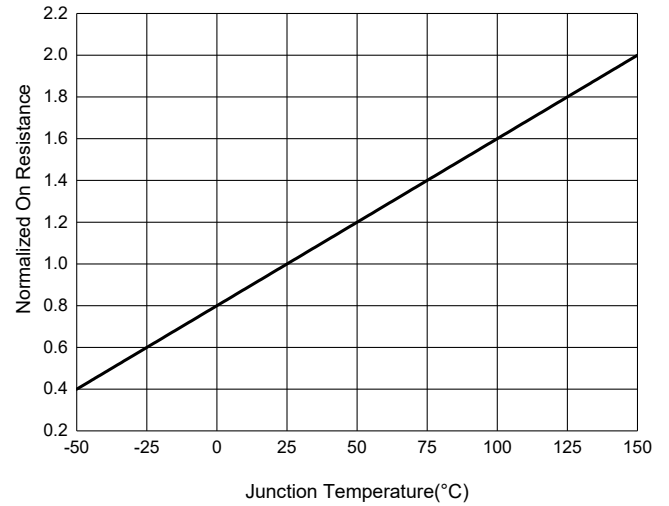


Fig. 5 - Capacitance Characteristics

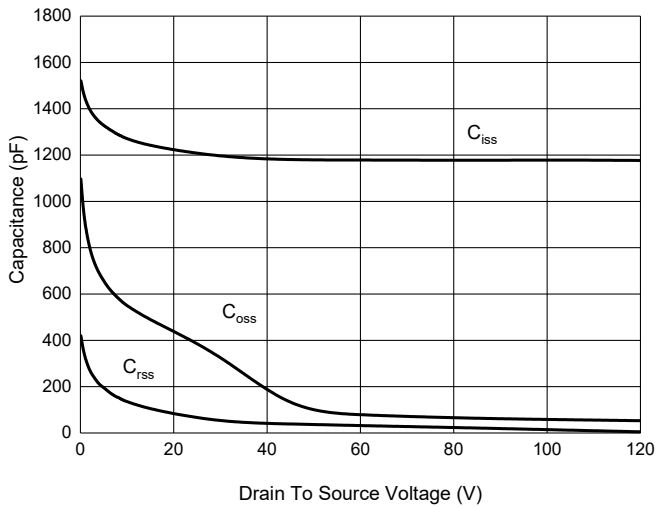
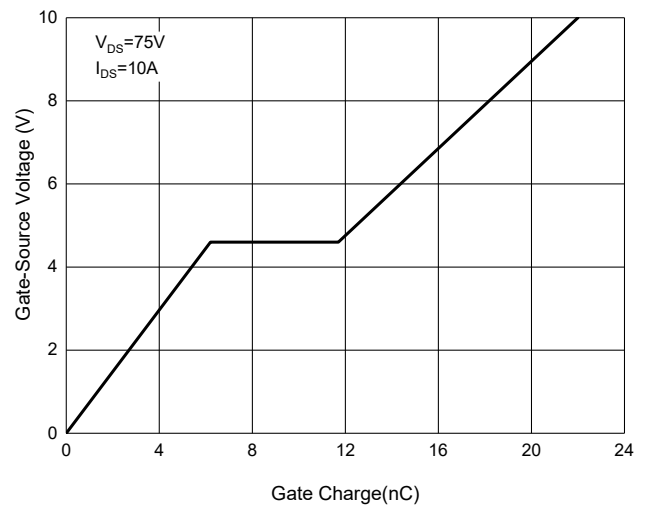
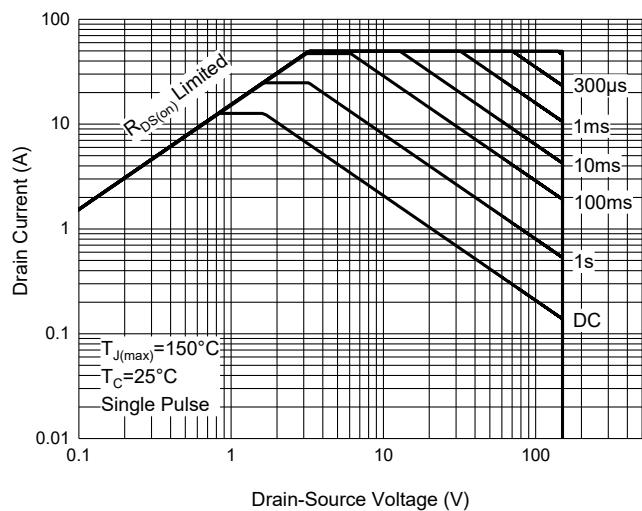


Fig. 6 - Gate Charge



## Curve Characteristics

Fig. 7 - Safe Operation Area



## Ordering Information

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

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