

## Features

- Ultra Low On-Resistance
- 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

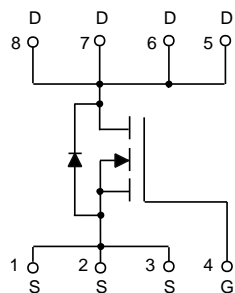
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 5°C/W Junction to Case

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	100	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$I_D$	4	A
Pulsed Drain Current (Note 2)	$I_{DM}$	20	A
Single Pulse Avalanche Energy (Note 3)	$E_{AS}$	16	mJ
Total Power Dissipation	$P_D$	25	W

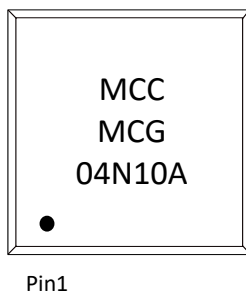
### Note:

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Repetitive Rating, Pulse Width Limited by Maximum Junction Temperature.
3. EAS Condition:  $T_J=25^\circ\text{C}$ ,  $V_{DD}=50\text{V}$ ,  $V_G=10\text{V}$ ,  $R_g=25\Omega$ .

## Internal Structure

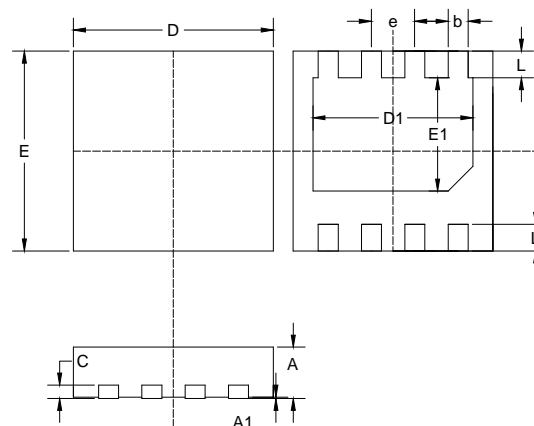


## Device Marking



# 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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	100			V
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=100V, V_{GS}=0V$			1	$\mu A$
Gate-Threshold Voltage <sup>(Note 4)</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.5		2.6	V
Drain-Source On-Resistance <sup>(Note 4)</sup>	$R_{DS(on)}$	$V_{GS}=10V, I_D=4.5A$		85	95	m $\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS}=5V, I_D=4.5A$	5			S
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=50V, V_{GS}=0V, f=1MHz$		612		pF
Output Capacitance	$C_{oss}$			120		
Reverse Transfer Capacitance	$C_{rss}$			91		
Total Gate Charge	$Q_g$	$V_{DS}=50V, V_{GS}=10V, I_D=4.5A$		11		nC
Gate-Source Charge	$Q_{gs}$			1.9		
Gate-Drain Charge	$Q_{gd}$			2.8		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=50V, R_L=8.6\Omega$ $V_{GS}=10V, R_G=3\Omega$		8		ns
Turn-On Rise Time	$t_r$			3		
Turn-Off Delay Time	$t_{d(off)}$			17		
Turn-Off Fall Time	$t_f$			4.5		
<b>Drain-Source Body Diode Characteristics</b>						
Continuous Body Diode Current	$I_S$				4	A
Body Diode Voltage	$V_{SD}$	$I_{SD}=1A, V_{GS}=0V$		0.74	1	V
Reverse Recovery Time	$t_{rr}$	$T_J=25^\circ C, I_F=4.5A, di/dt=500A/\mu s$		21		ns
Reverse Recovery Charge	$Q_{rr}$				97	
Forward Turn-on Time	$t_{on}$	Intrinsic Turn-on Time is Negligible(Turn-on is Dominated by LS+LD)				

 Note: 4. Pulse Test : Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 1.5\%$ .

## Curve Characteristics

Fig. 1 - Typical Output Characteristics

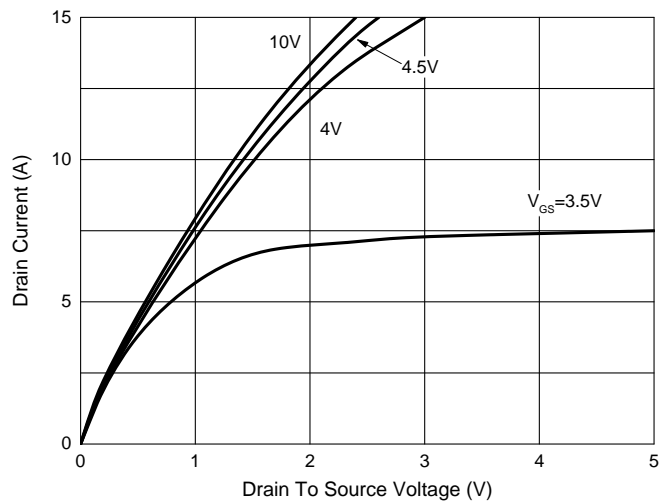


Fig. 2 - Transfer Characteristics

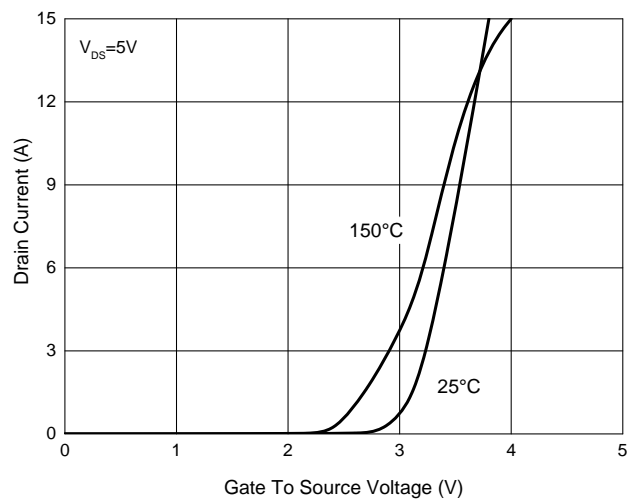


Fig. 3 -  $R_{DS(ON)} - I_D$

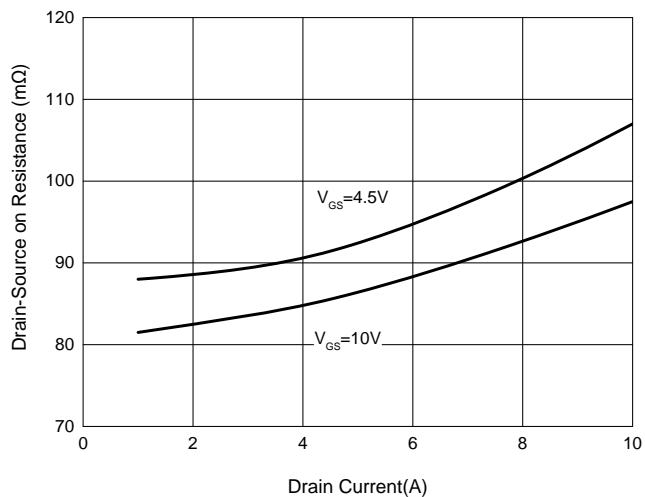


Fig. 4 - Normalized On Resistance Characteristics

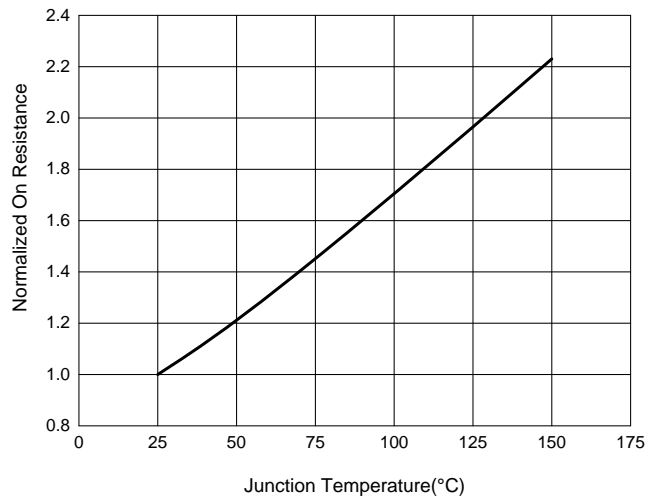


Fig. 5 - Total Gate Charge Characteristics

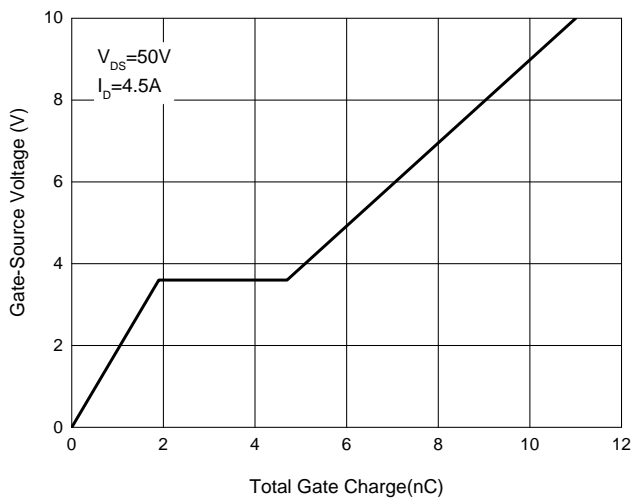
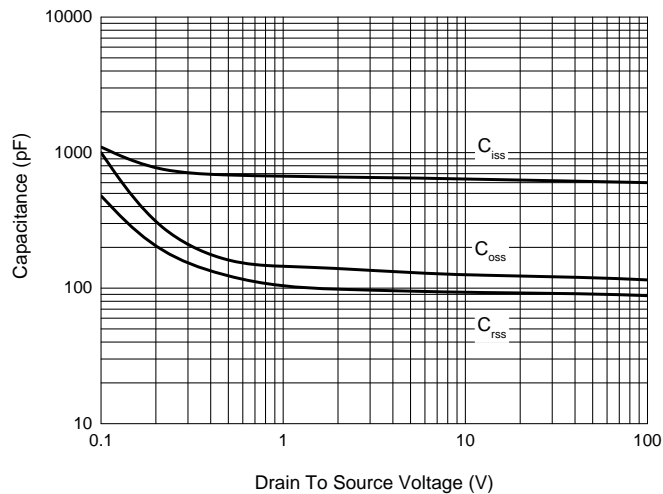


Fig. 6 - Capacitance Characteristics



## Ordering Information

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

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