

Features

- Split Gate Trench MOSFET Technology
- High Speed Switching
- Moisture Sensitivity Level 3
- High Density Cell Design for Low $R_{DS(ON)}$
- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

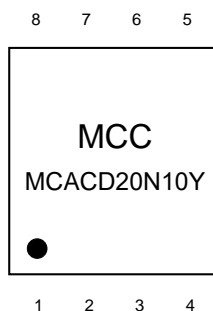
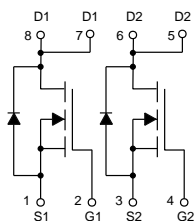
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +50°C
- Thermal Resistance: 7.5°C/W Junction to Case

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	20	A
Pulsed Drain Current ⁽³⁾	I_{DM}	80	A
Total Power Dissipation	P_D	17	W
Single Pulsed Avalanche Energy	E_{AS}	64	mJ

Note:

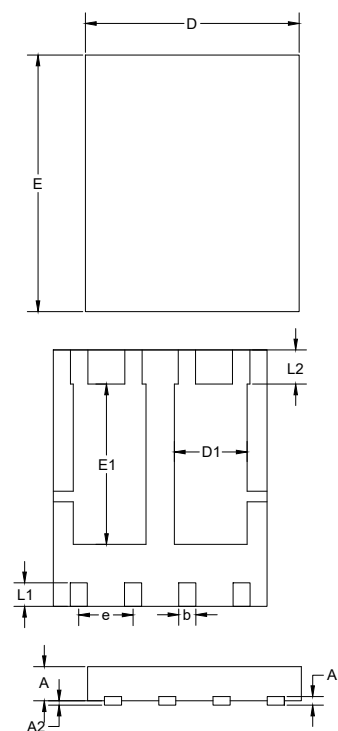
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. $R_{\theta JA}$ is the sum of the junction-to-case and case-to-ambient thermal resistance, where the case thermal reference is defined as the solder mounting surface of the drain pins. $R_{\theta JC}$ is guaranteed by design, while $R_{\theta JA}$ is determined by the board design. The maximum rating presented here is based on mounting on a 1 in² pad of 2oz copper.
3. Pulse Test: Pulse Width ≤ 300µs, Duty cycle ≤ 2%.

Internal Structure and Marking Code



Dual N-CHANNEL MOSFET

DFN5060-8D



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
D	0.193	0.201	4.90	5.10	
E	0.232	0.240	5.90	6.10	
A	0.028	0.035	0.70	0.90	
A1	0.008		0.20		BSC
A2	0.000	0.004	0.00	0.10	
D1	0.063	0.071	1.60	1.80	
E1	0.144	0.152	3.65	3.85	
L1	0.018	0.026	0.45	0.65	
L2	0.031		0.80		BSC
b	0.012	0.020	0.30	0.50	
e	0.050		1.27		BSC

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	100			V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V$			1	μA
Gate-Threshold Voltage ^(Note4)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0		2.5	V
Drain-Source On-Resistance ^(Note4)	$R_{DS(on)}$	$V_{GS}=10V, I_D=15A$			22	m Ω
Drain-Source On-Resistance ^(Note4)	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=7A$			27	m Ω
Diode Forward Voltage ^(Note4)	V_{SD}	$V_{GS}=0V, I_S=20A$			1.3	V
Maximum Body-Diode Continuous Current	I_S				20	A
Gate Resistance	R_G	f=1MHz, Open Drain		1.2		Ω
Dynamic Characteristics^(Note5)						
Input Capacitance	C_{iss}	$V_{DS}=50V, V_{GS}=0V, f=1MHz$		1051		pF
Output Capacitance	C_{oss}			399		
Reverse Transfer Capacitance	C_{rss}			18		
Switching Characteristics^(Note5)						
Total Gate Charge	Q_g	$V_{GS}=10V, V_{DS}=50V, I_D=25A$		16		nC
Gate-Source Charge	Q_{gs}			5.6		
Gate-Drain Charge	Q_{gd}			2.4		
Reverse Recovery Charge	Q_{rr}	$I_F=20A, di/dt=100A/\mu s$		42		ns
Reverse Recovery Time	t_{rr}			39.8		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V, V_{DD}=50V,$ $I_{DS}=4A, R_G=3\Omega$		39.2		ns
Turn-On Rise Time	t_r			11		
Turn-Off Delay Time	$t_{d(off)}$			53.2		
Turn-Off Fall Time	t_f			15.8		

Notes:

 4. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycles $\leq 2\%$.

5. Guaranteed by Design, Not Subject to Production Testing.

Curve Characteristics

Fig. 1 - Typical Output Characteristics

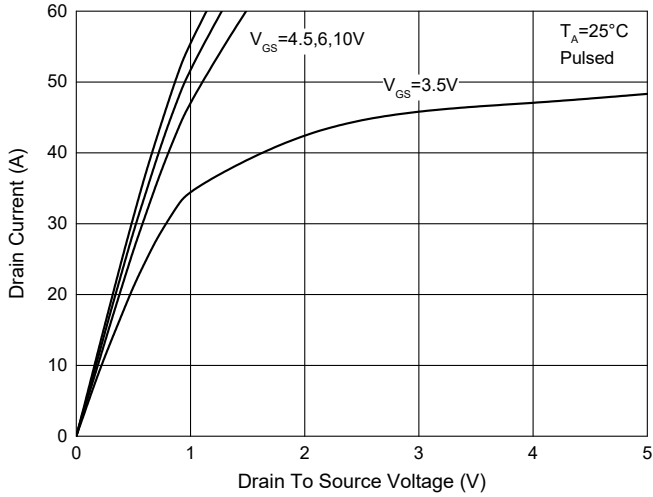


Fig. 2 - Transfer Characteristics

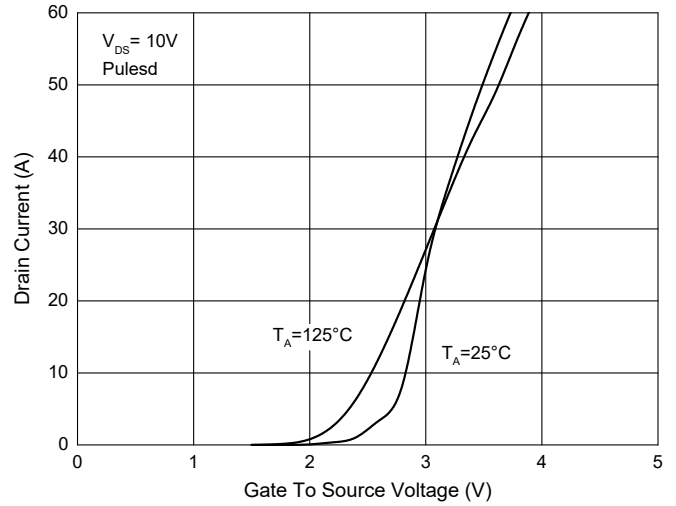


Fig. 3 - $R_{DS(ON)} - I_D$

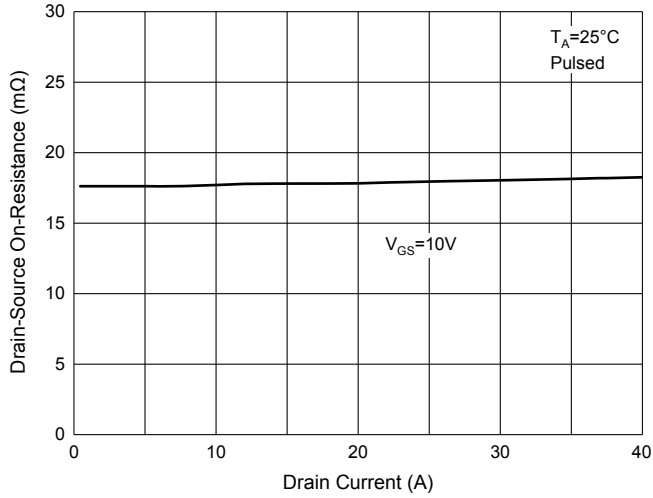


Fig. 4 - Normalized On Resistance Characteristics

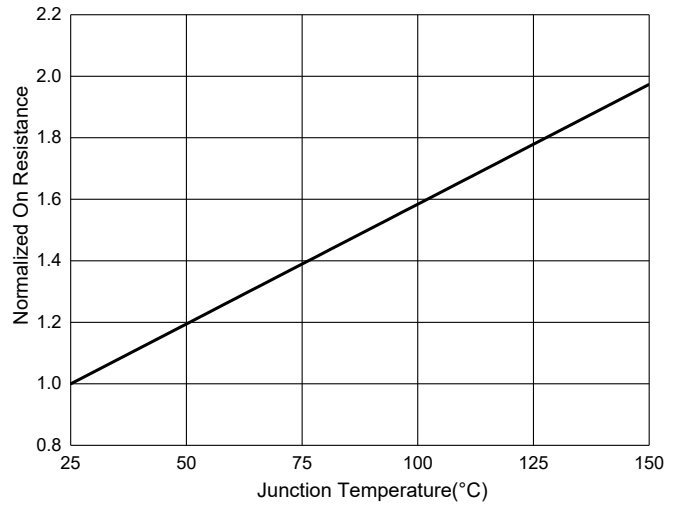


Fig. 5 - Capacitance Characteristics

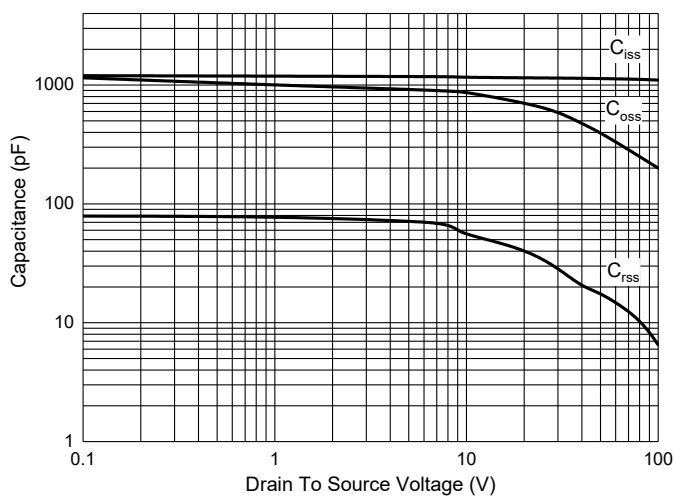
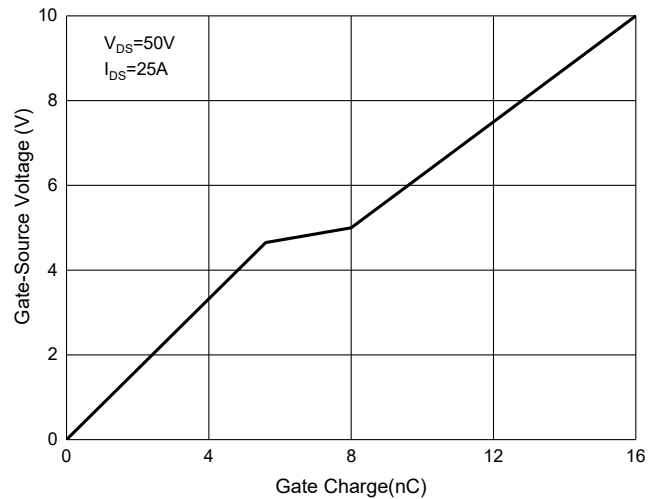


Fig. 6 - Gate Charge



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 5Kpcs/Reel

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