

Features

- Trench Power LV MOSFET Technology
- Low Thermal Resistance
- AEC-Q101 Qualified
- 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)
- Moisture Sensitivity Level 3

Maximum Ratings

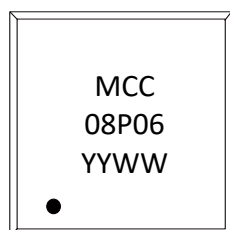
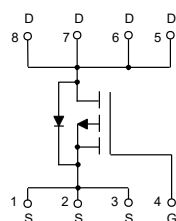
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 6°C/W Junction to Case⁽²⁾

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-8	A
Pulsed Drain Current ⁽³⁾	I_{DM}	-60	A
Total Power Dissipation	P_D	20.8	W
Single Pulsed Avalanche Energy ⁽⁴⁾	E_{AS}	242	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. Surface Mounted on 1 in² pad area, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty cycle $\leq 2\%$.
4. $V_{DD} = -50V$, $L = 1mH$.

Internal Structure and Marking Code

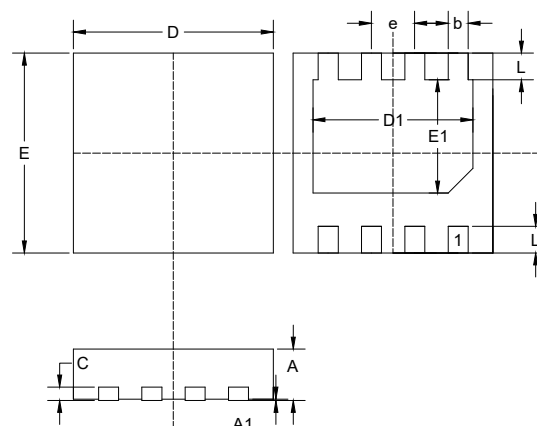


pin1

YYWW: 4 codes in total
YY is the year
WW is the cycle

P-CHANNEL MOSFET

DFN3333-8



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.028	0.031	0.70	0.80	
A1	0.000	0.002	0.00	0.05	
C	0.008		0.20		TYP.
b	0.010	0.014	0.25	0.35	
D	0.130		3.30		TYP.
E	0.130		3.30		TYP.
e	0.026		0.65		TYP.
D1	0.100	0.110	2.55	2.80	
E1	0.065	0.074	1.64	1.89	
L	0.013	0.021	0.325	0.525	

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 =-250μA	-60			V
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-48V, V _{GS} =0V			-1	μA
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1		-3	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-6A		23.6	28.4	mΩ
		V _{GS} =-4.5V, I _D =-3A		30.2	39.3	mΩ
Diode Characteristics						
Continuous Body Diode Current	I _S				-8	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-3A			-1.3	V
Reverse Recovery Time	t _{rr}	I _F =-3A, dI _F /dt=100A/μs		29		ns
Reverse Recovery Charge	Q _{rr}			38		nC
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-30V, V _{GS} =0V, f=1MHz		4304		pF
Output Capacitance	C _{oss}			168		
Reverse Transfer Capacitance	C _{rss}			104		
Total Gate Charge	Q _g	V _{DS} =-30V, V _{GS} =-10V, I _D =-3A		61		nC
Gate-Source Charge	Q _{gs}			17		
Gate-Drain Charge	Q _{gd}			7.1		
Turn-On Delay Time	t _{d(on)}	V _{DS} =-30V, V _{GEN} =-10V, R _G =4.5Ω, R _L =2Ω, I _{DS} =-3A		62		ns
Turn-On Rise Time	t _r			79		
Turn-Off Delay Time	t _{d(off)}			376		
Turn-Off Fall Time	t _f			161		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

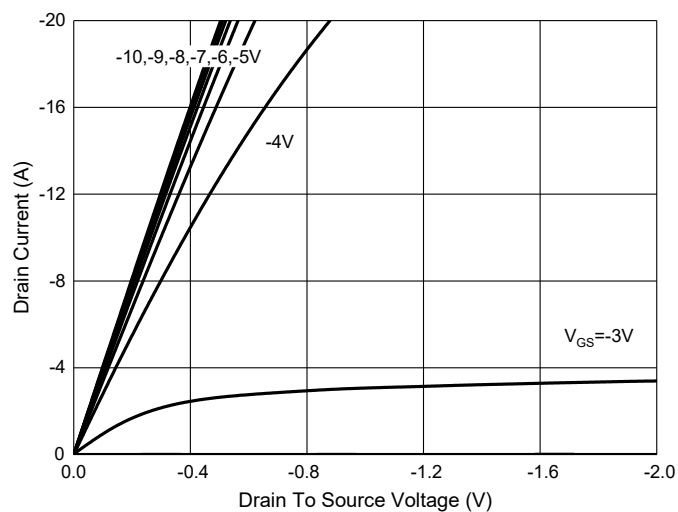


Fig. 2 - $I_S - V_{SD}$

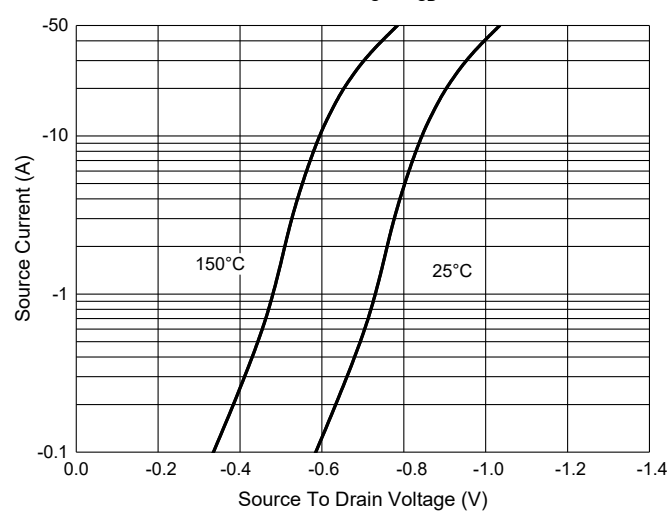


Fig. 3 - $R_{DS(ON)} - I_D$

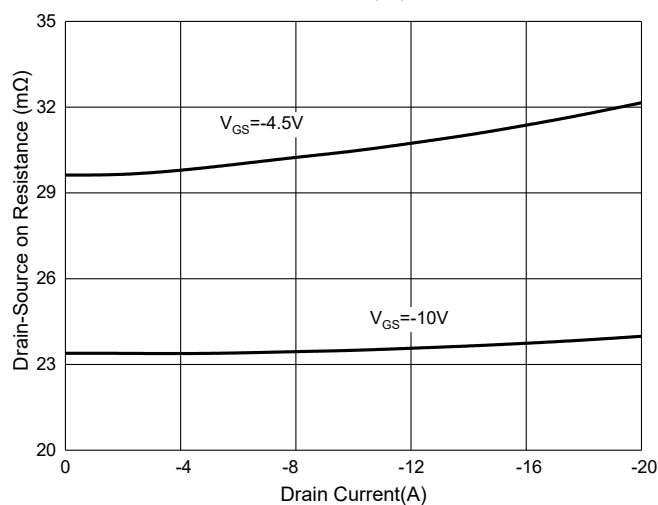


Fig. 4 - Normalized On Resistance Characteristics

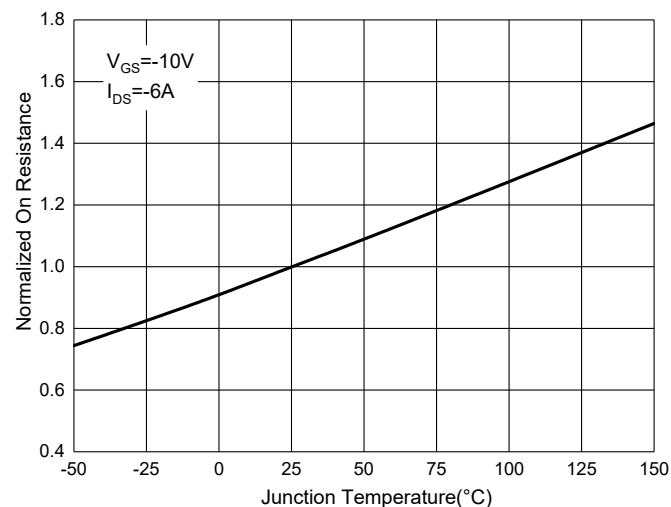


Fig. 5 - Capacitance Characteristics

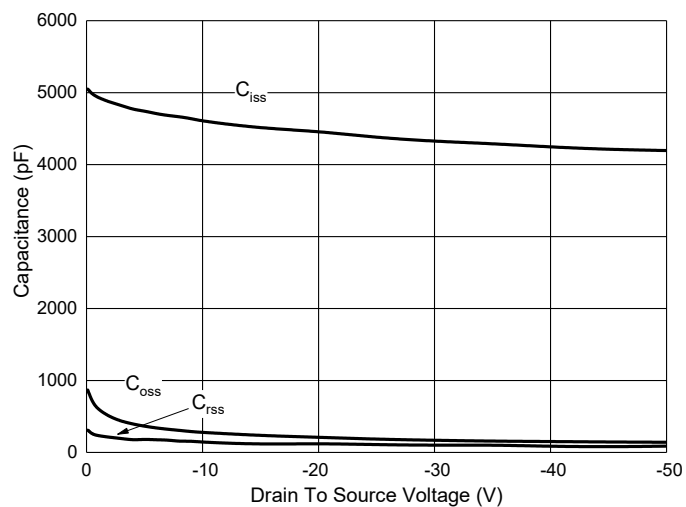
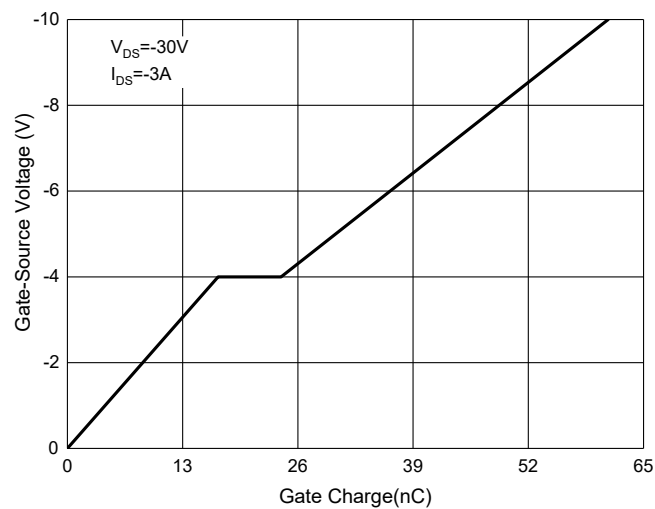


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Safe Operation Area

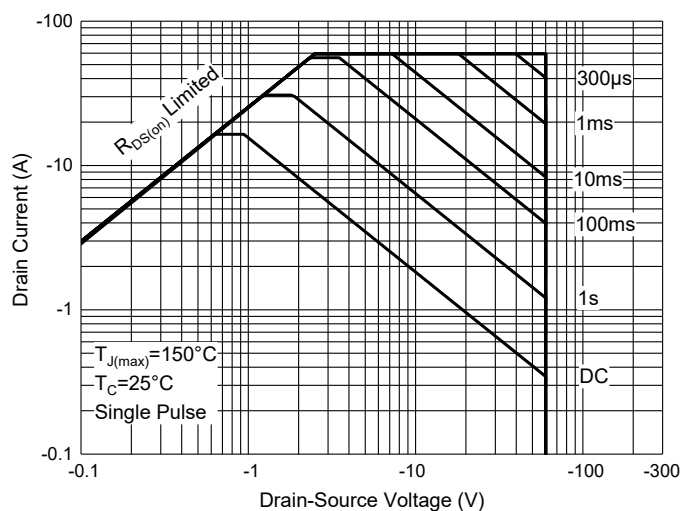
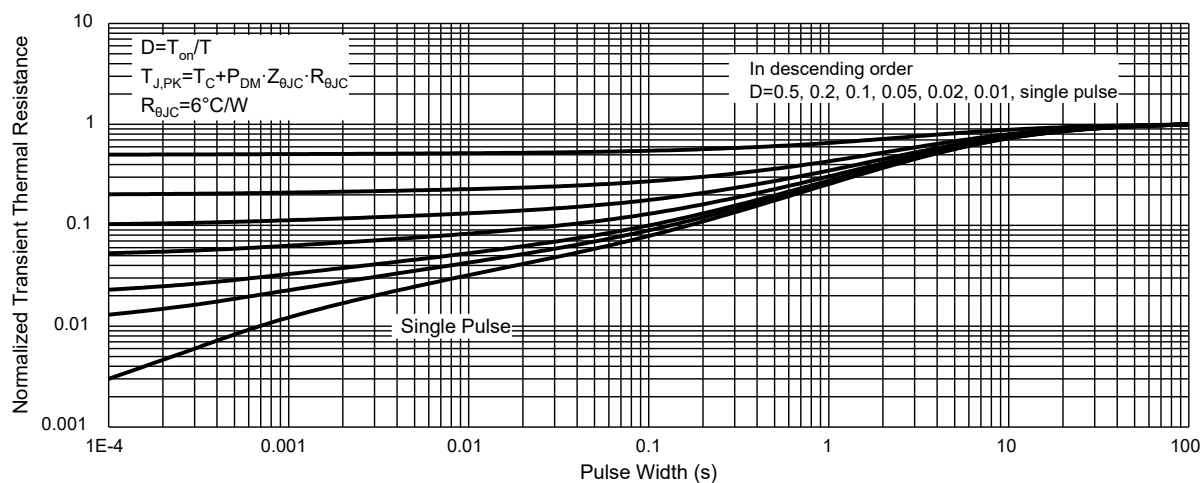


Fig. 8 - Normalized Maximum Transient Thermal Impedance



Ordering Information

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

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