

Features

- AEC-Q101 Qualified
- Trench Power MV MOSFET Technology
- Low Thermal Resistance
- Moisture Sensitivity Level 1
- 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

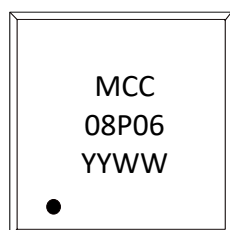
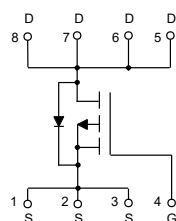
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 60°C/W Junction to Ambient (Note2)
- Thermal Resistance: 6°C/W Junction to Case

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DS}	-60	V
Gate-Source Voltage		V _{GS}	±20	V
Continuous Drain Current	T _C =25°C	I _D	-8	A
	T _C =100°C		-5	
Pulsed Drain Current ^(Note3)		I _{DM}	-32	A
Total Power Dissipation ^(Note4)		P _D	20.8	W
Single Pulsed Avalanche Energy ^(Note5)		E _{AS}	50	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. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^\circ\text{C}$.
3. Repetitive rating; pulse width limited by max. junction temperature.
4. P_D is based on max. junction temperature, using junction-case thermal resistance.
5. $T_J=25^\circ\text{C}$, $V_{DD}=-50\text{V}$, $V_{GS}=-10\text{V}$, $R_G=25\Omega$, $L=1\text{mH}$.

Internal Structure and Marking Code

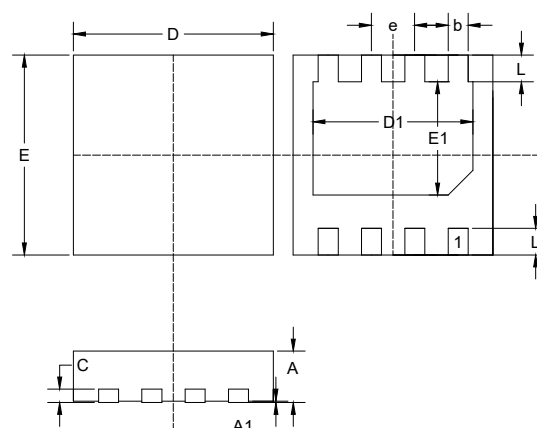


pin1

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

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	-1.9	-3	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-6A		20	28.4	mΩ
		V _{GS} =-4.5V, I _D =-3A		24	39.3	
Gate Resistance	R _g	f=1Mhz, Open drain		5		Ω
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 =-15A, 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		4306		pF
Output Capacitance	C _{oss}			178		
Reverse Transfer Capacitance	C _{rss}			158		
Total Gate Charge	Q _g	V _{DS} =-30V, V _{GS} =-10V, I _D =-15A		61		nC
Gate-Source Charge	Q _{gs}			17		
Gate-Drain Charge	Q _{gd}			7.1		
Turn-On Delay Time	t _{d(on)}	V _{DD} =-30V, V _{GS} =-10V, R _{GEN} =4.5Ω, I _{DS} =-15A		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

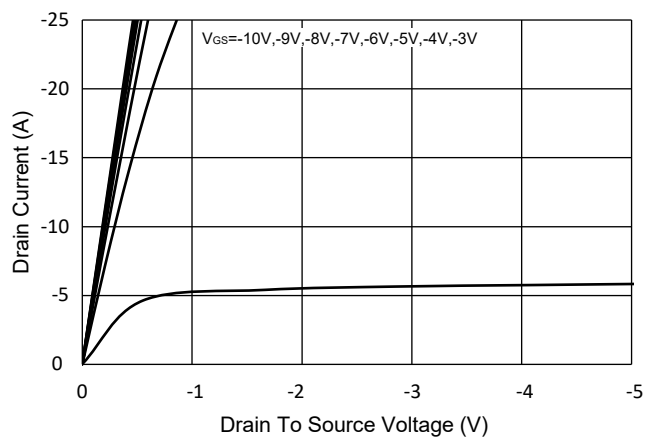


Fig.2 - Transfer Characteristic

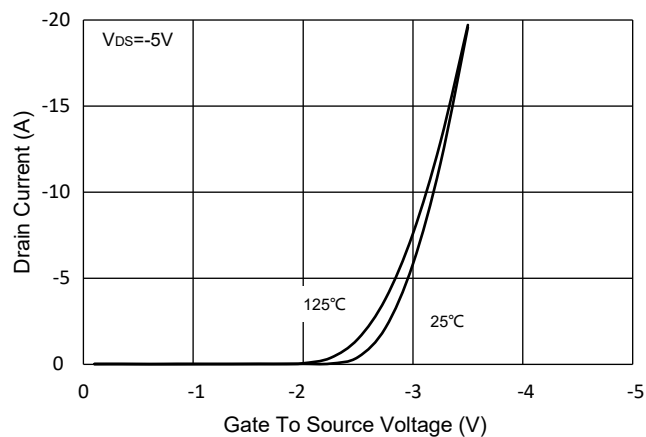


Fig.3 - $R_{DS(ON)}$ - V_{GS}

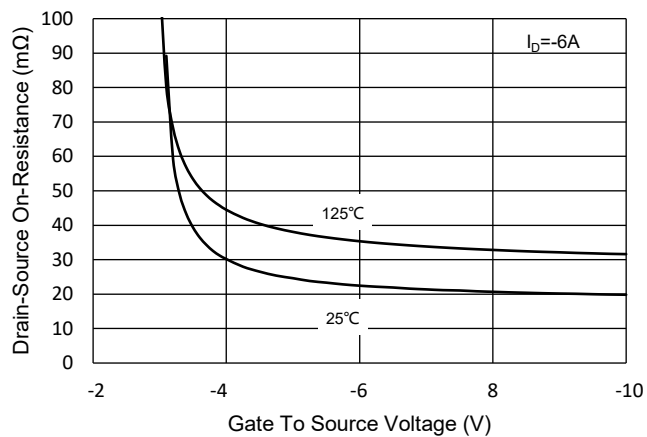


Fig. 4 - $R_{DS(ON)}$ - I_D

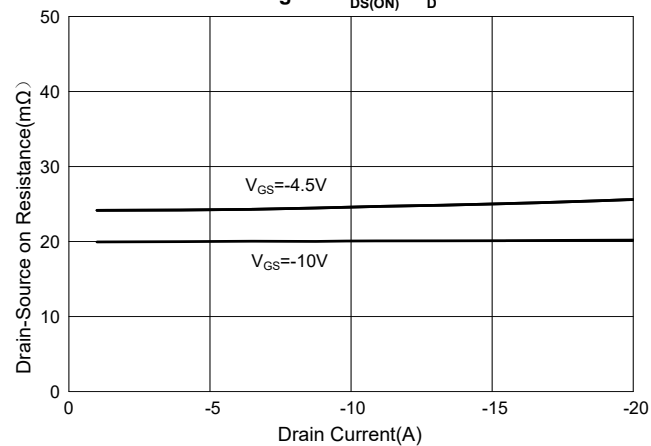


Fig.5 - Capacitance Characteristics

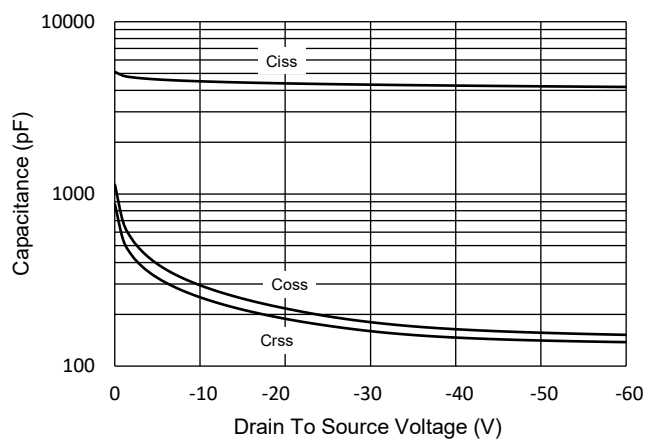
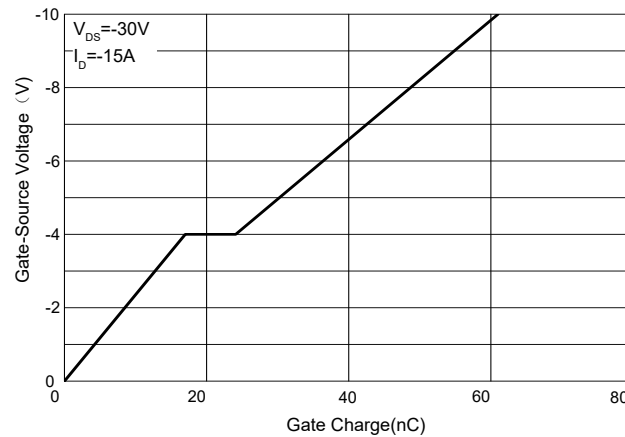


Fig. 6 - Gate Charge



Curve Characteristics

Fig.7 - Normalized Threshold Voltage

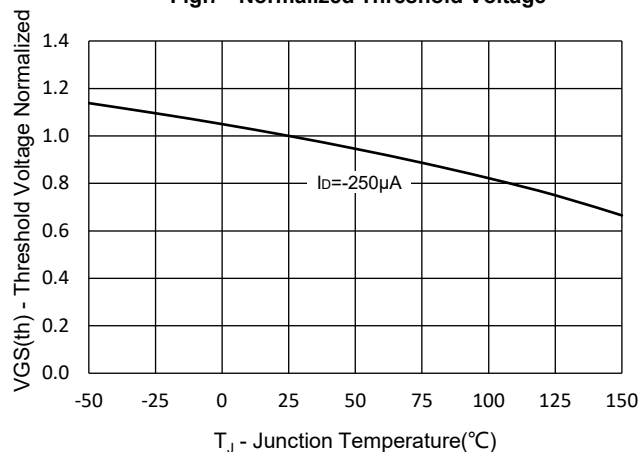


Fig.8 - Normalized On Resistance Characteristics

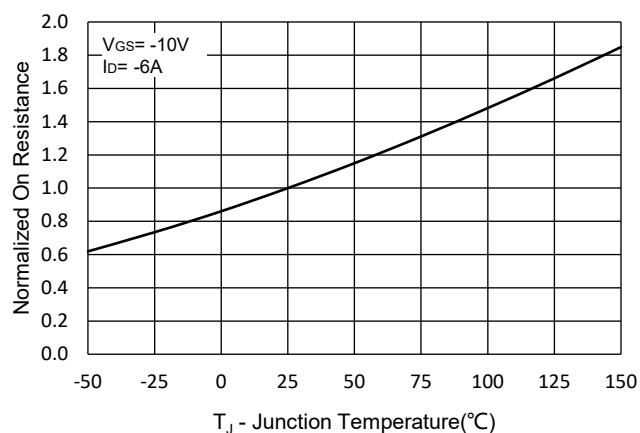


Fig.9 - I_S - V_{SD}

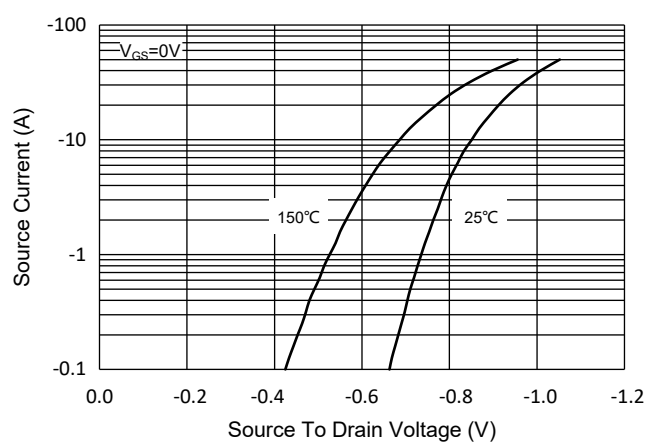


Fig.10 - Drain Current

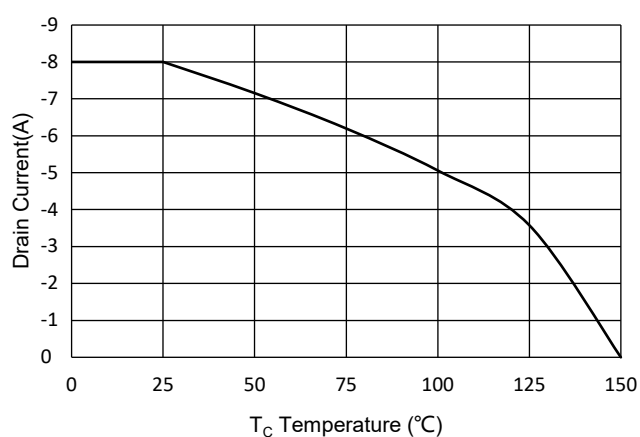
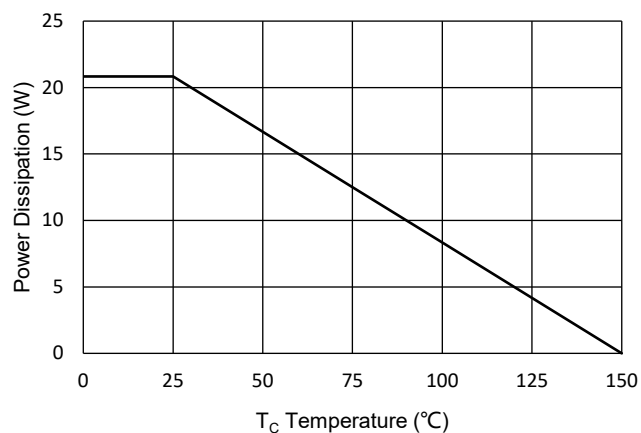


Fig.11 - PD Dissipation



Curve Characteristics

Fig.12 - Safe Operation Area

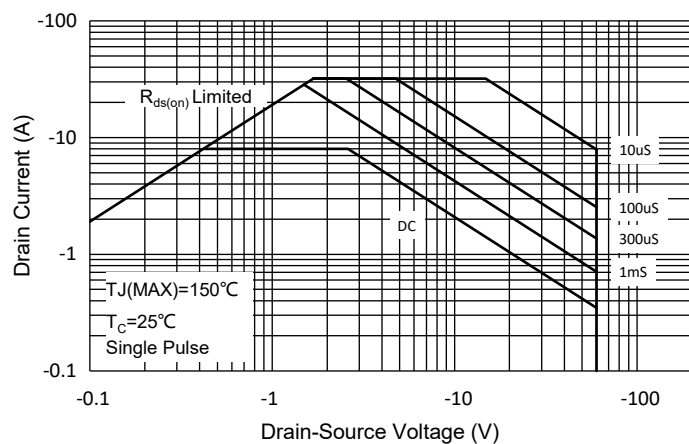
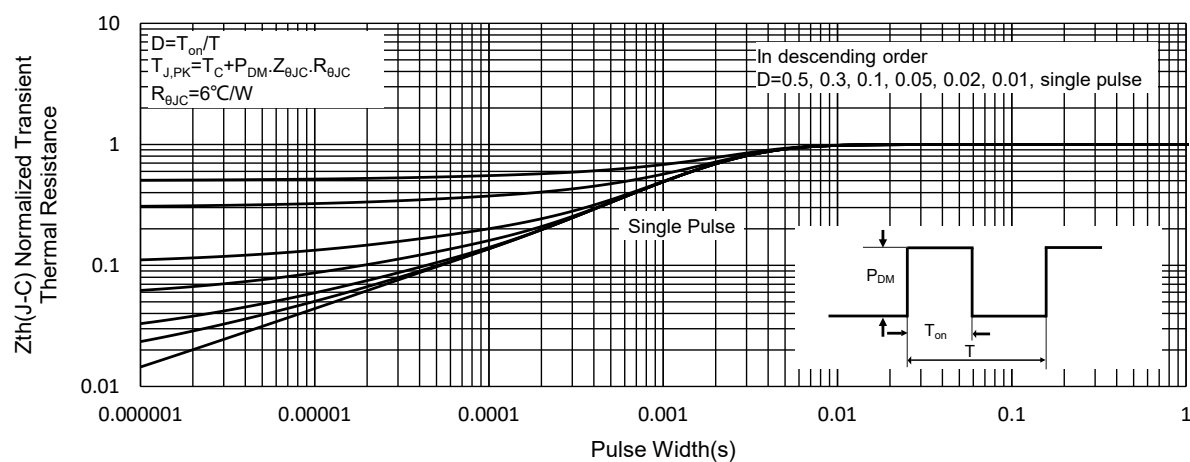


Fig.13 - Normalized Transient Thermal Impedance



Ordering Information

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

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