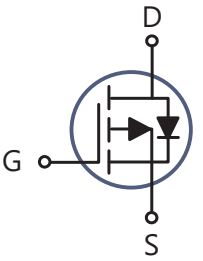
PRODUCT SUMMARY	
V_{DSS}	-60V
I_D	-10A
$R_{DS(ON)}$ (mΩ) Typ	88 @ V_{GS}=-10V
$R_{DS(ON)}$ (mΩ) Typ	110 @ V_{GS}=-4.5V



Features

- High - speed switching
- Excellent gate charge x Rds(ON) procuct (FOM)
- Super high density cell design for extremely low RDS(ON)
- Exceptional on-resistance and maximum DC current capability
- RoHS and Halogen - free compliant

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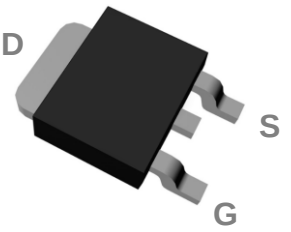


ABSOLUTE MAXIMUM RATINGS (T_C=25°C unless otherwise noted)

Parameter		Symbol	Limit	Units
Drain-Source Voltage		V_{DS}	-60	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current-Continuous (Note 2)	T_C=25°C	I_D	-10	A
	T_C=70°C		-8.1	A
-Pulsed (Note 1、Note 2)		I_{DM}	-40	A
Single Pulse Avalanche Energy (Note 3)		E_{AS}	21	mJ
Maximum Power Dissipation	T_C=25°C	P_D	32	W
	T_C=70°C		21	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C

THERMAL CHARACTERISTICS

Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	3.8	°C/W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	62	°C/W

ELECTRICAL CHARACTERISTICS (TC=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V , I_D=-250uA	-60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-48V , V_{GS}=0V			-1	uA
Gate-Body Leakage Current	I_{GSS}	V_{GS}= ±20V , V_{DS}=0V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=-250uA	-1.0	-1.7	-2.5	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=-10V , I_D=-5A		88	108	m ohm
		V_{GS}=-4.5V , I_D=-3A		110	138	m ohm
Forward Transconductance	g_{FS}	V_{DS}=10V , I_D=-3A		2.6		S
DYNAMIC CHARACTERISTICS (Note 4)						
Input Capacitance	C_{ISS}	V_{DS}=-30V,V_{GS}=0 V f=1.0MHz		985		pF
Output Capacitance	C_{OSS}			85		pF
Reverse Transfer Capacitance	C_{RSS}			43		pF
Total Gate Charge	Q_g	V_{DS}=-30V,I_D=-5A,V_{GS}=-10V		14.7		nC
Gate-Source Charge	Q_{gs}	V_{DS}=-30V,I_D=-5A , V_{GS}=-10V		2.4		nC
Gate-Drain Charge	Q_{gd}			3.5		nC
SWITCHING CHARACTERISTICS (Note 4)						
Turn-On Delay Time	$t_{D(ON)}$	V_{DD}=-30V I_D=-5A V_{GS}=-10V R_{GEN}= 6 ohm		9		ns
Rise Time	tr			22		ns
Turn-Off Delay Time	$t_{D(OFF)}$			38		ns
Fall Time	tf			8		ns
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=-2A		-0.73	-1.2	V

Notes

1.Pulse Test Width ≤ 300us,Duty Cycle≤ 2%.
2.Drain current limited by maximum junction temperature.
3.Starting Tj=25°C ,L=0.5mH,V_{DD}=-30V.(See Figure11)
4.Guaranteed by design,not subject to production testing.

Figure 1. Output Characteristics

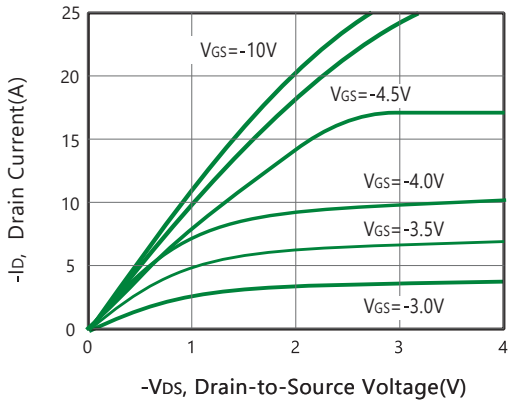


Figure 2. Body Diode Forward Voltage Variation with Source Current

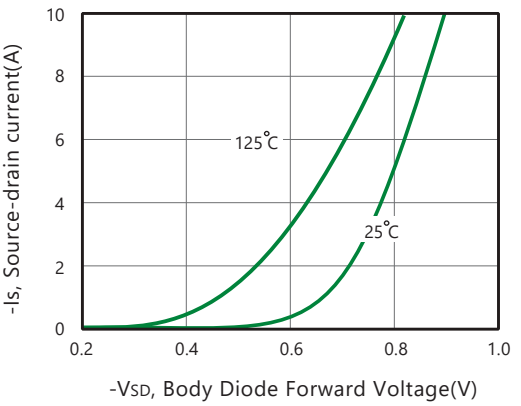


Figure 3. On-Resistance vs. Gate-Source Voltage

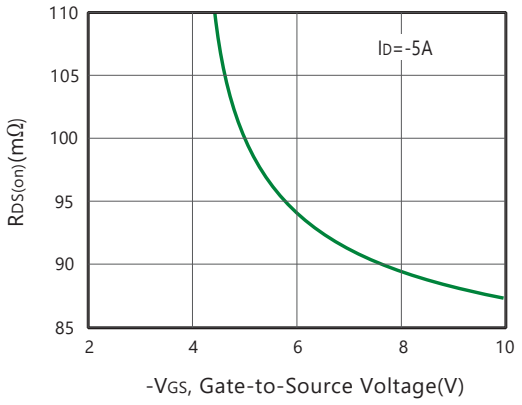


Figure 4. On-Resistance Variation with Drain Current and Temperature

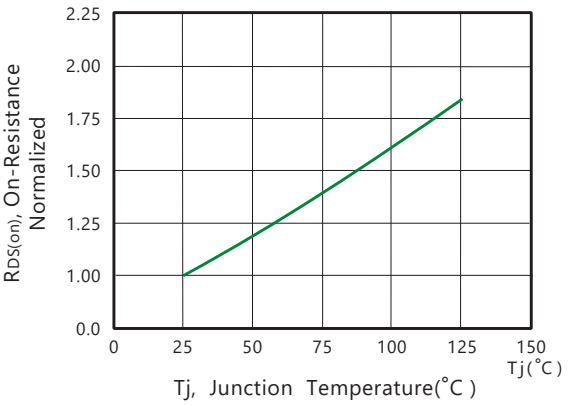


Figure 5. Gate Threshold Variation with Temperature

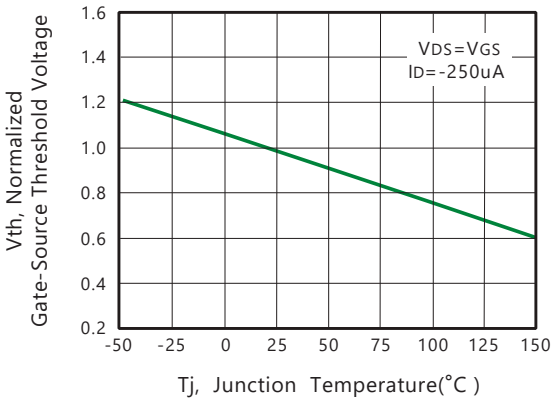


Figure 6. Gate Charge

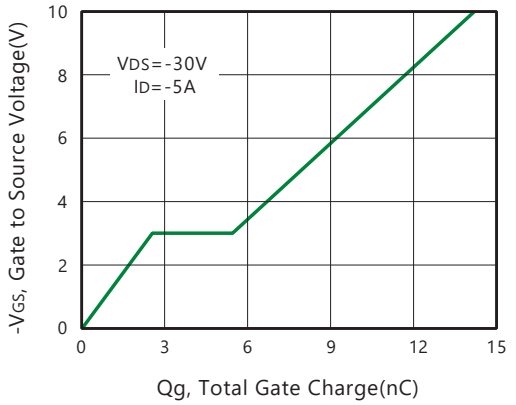


Figure 7. Capacitance

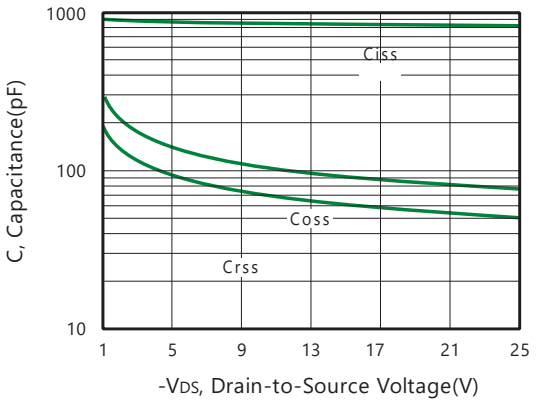
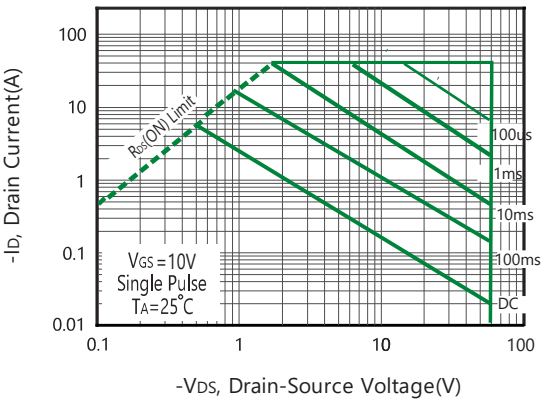


Figure 8. Maximum Safe Operating Area



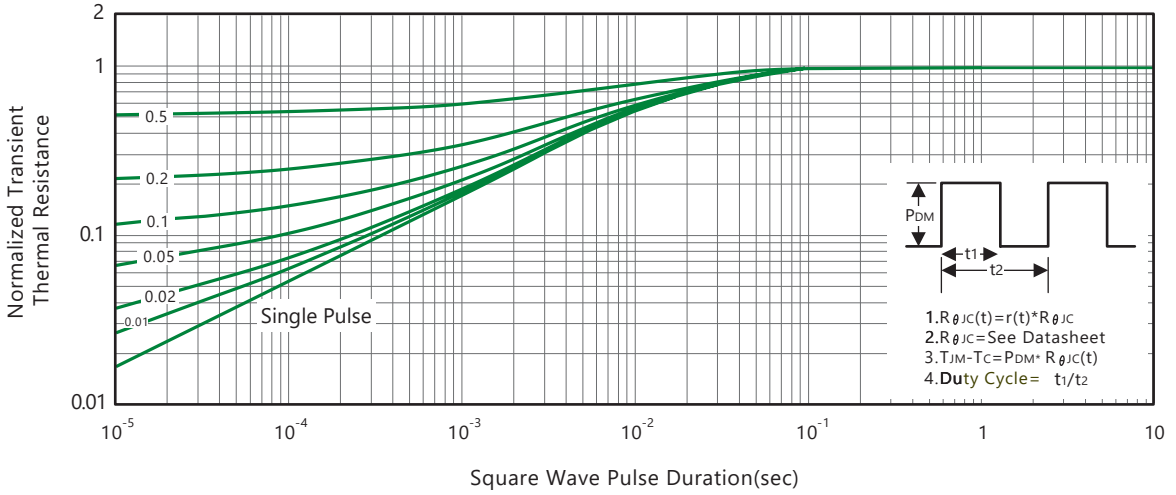


Figure 9. Normalized Thermal Transient Impedance Curve

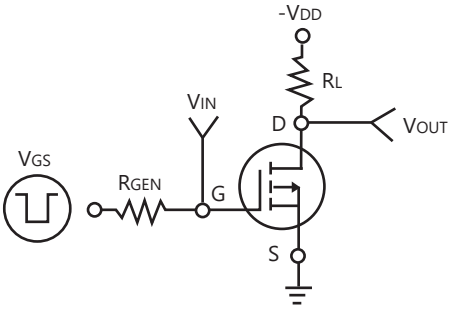


Figure 10a. Switching Test Circuit

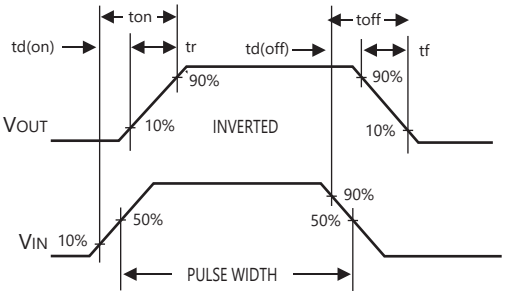
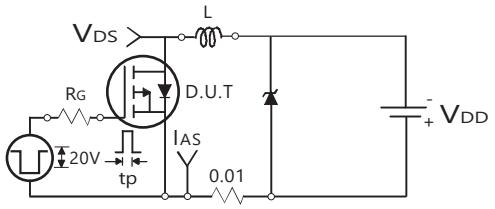
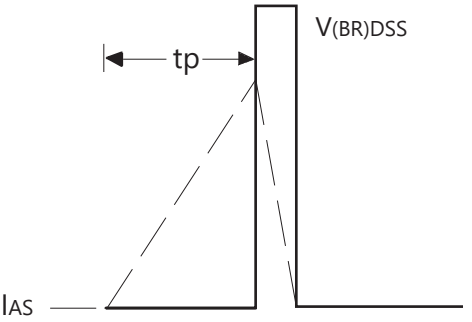


Figure 10b. Switching Waveforms



Unclamped Inductive Test Circuit

Figure 11a.



Unclamped Inductive Waveforms

Figure 11b.

PACKAGE OUTLINE DIMENSIONS

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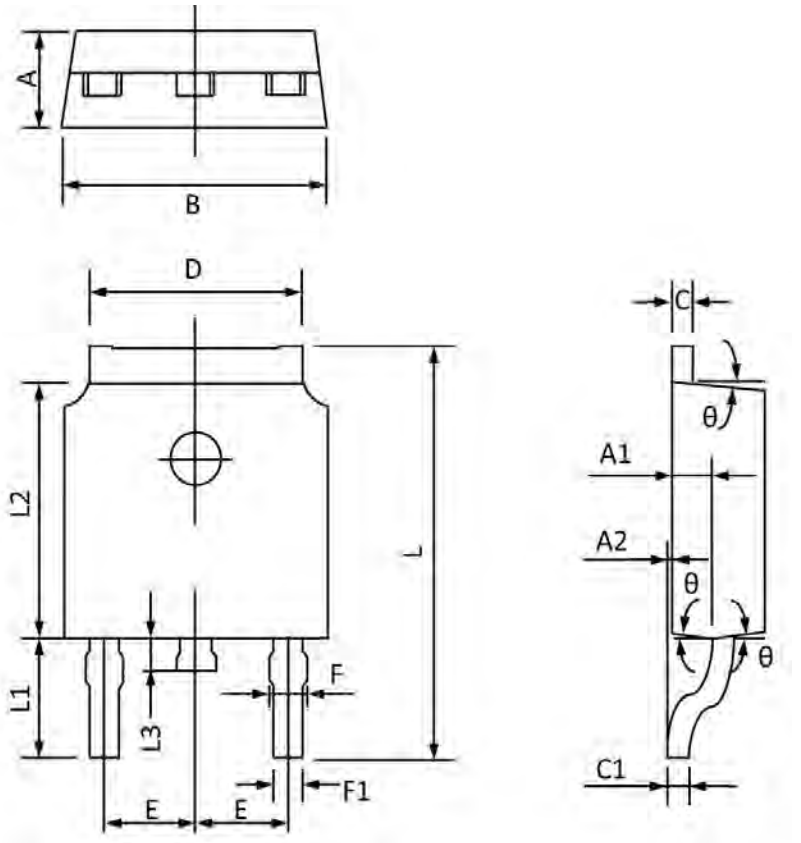

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MAX	MIN	MAX	MIN
A	2.450	2.150	0.096	0.085
A1	1.200	0.910	0.047	0.036
A2	0.150	0.000	0.006	0.000
B	6.800	6.300	0.268	0.248
C	0.580	0.350	0.023	0.014
C1	0.550	0.380	0.022	0.015
D	5.500	5.100	0.217	0.201
E	2.390	2.000	0.094	0.079
F	0.940	0.600	0.037	0.024
F1	0.860	0.500	0.034	0.020
L	10.400	9.400	0.409	0.370
L1	3.000	2.400	0.118	0.094
L2	6.200	5.300	0.244	0.209
L3	1.200	0.600	0.047	0.024
θ	9°	3°	9°	3°