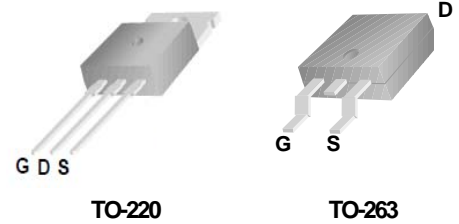
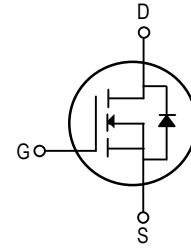


Features

- 60V/80A
RDS(ON)=7.3mΩ @ VGS=10V
- Lead free and Green Device Available
- Low Rds-on to Minimize Conductive Loss
- High avalanche Current
- 100% Avalanche Tested



Application

- Power Supply
- DC-DC Converters
- UPS
- Battery Management System

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Symbol	Parameter	Maximum	Unit
V _{DSS}	Drain-to-Source Voltage	60	V
V _{GSS}	Gate-to-Source Voltage	±25	V
I _D ³	Continuous Drain Current	T _C =25°C	80
		T _C =100°C	66
I _{DP} ⁴	Pulsed Drain Current	T _C =25°C	320
EAS ⁵	Avalanche energy	242	mJ
PD	Maximum Power Dissipation	T _C =25°C	125
T _J , T _{STG}	Junction & Storage Temperature Range	-55~175	°C

Thermal Characteristics

Symbol	Parameter	Typical	Unit
Rθ _{jc}	Thermal Resistance-Junction to Case	1.0	°C/W
Rθ _{ja}	Thermal Resistance-Junction to Ambient	62.5	

Electrical Characteristics (TA=25°C unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	60	—	—	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =60V, V _{GS} =0V	—	—	1	uA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	2	3	4	V
I _{GSS}	Gate Leakage Current	V _{GS} =±25V, V _{DS} =0V	—	—	±100	nA
R _{DS(on)} ¹	Drain-Source On-Resistance	V _{GS} =10V, I _D =40A	—	7.3	8	mΩ
			—	—	—	
Diode Characteristics						
V _{SD} ¹	Diode Forward Voltage	I _{SD} =40A, V _{GS} =0V	—	—	1.3	V
I _S ³	Diode Continuous Forward Current		—	—	100	A
t _{rr}	Reverse Recovery Time	I _S =40A,	—	70	—	nS
Q _{rr}	Reverse Recovery Charge	di/dt=100A/us	—	100	—	nC
Dynamic Characteristics²						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =25V Frequency=1MHz	—	3970	—	pF
C _{oss}	Output Capacitance		—	365	—	
C _{rss}	Reverse Transfer Capacitance		—	257	—	
t _{d(on)}	Turn-On Delay Time	V _{DD} =34V, I _D =40A, V _{GS} =10V, (Note1,4)	—	57	—	nS
t _r	Rise Time		—	63	—	
t _{d(off)}	Turn-Off Delay Time		—	139	—	
t _f	Fall Time		—	50	—	
Gate Charge Characteristics²						
Q _g	Total Gate Charge	V _{DD} =48V, I _D =40A, V _{GS} =10V, (Note1,4)	—	91	—	nC
Q _{gs}	Gate-to-Source Charge		—	19	—	
Q _{gd}	Gate-to-Drain Charge		—	30	—	

Note: 1: Pulse test; pulse width ≤ 300us, duty cycle ≤ 2%.

2: Guaranteed by design, not subject to production testing.

3: Package limitation current is 100A. Calculated continuous current based on maximum allowable junction temperature.

4: Repetitive rating, pulse width limited by max junction temperature.

5: Starting TJ = 25°C, L = 1mH, IAS = 22A.

Typical Operating Characteristics

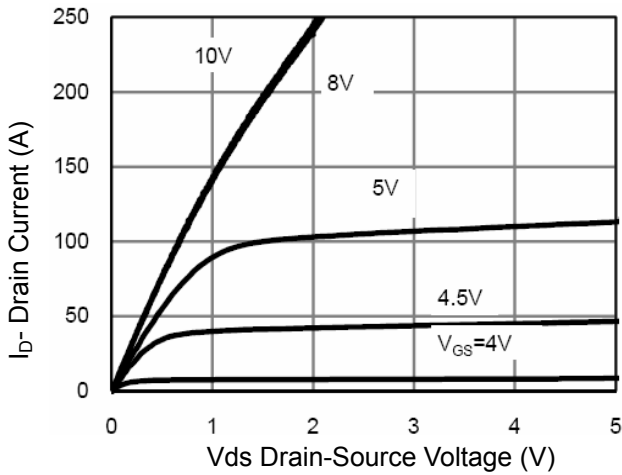


Figure 1 Output Characteristics

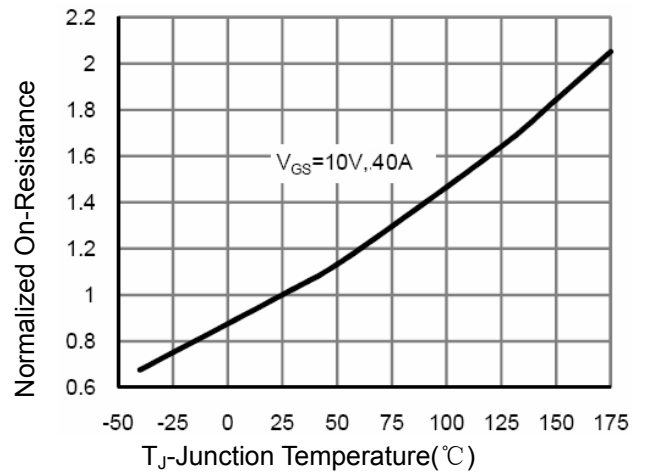


Figure 4 Rds(on)-Junction Temperature

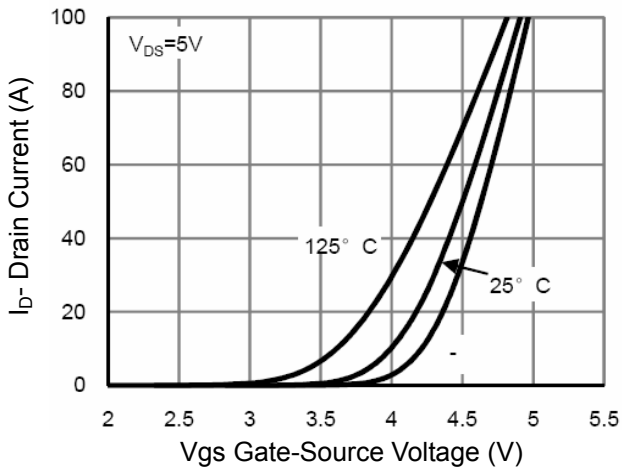


Figure 2 Transfer Characteristics

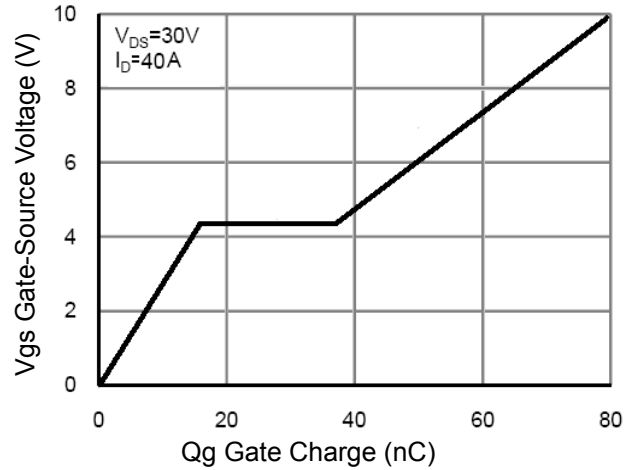


Figure 5 Gate Charge

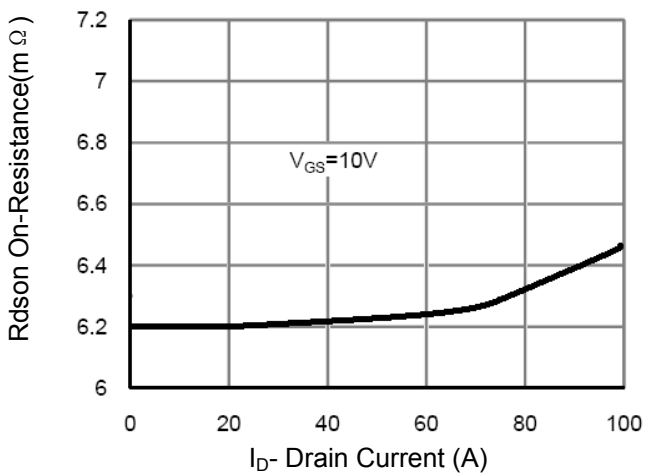


Figure 3 Rds(on)- Drain Current

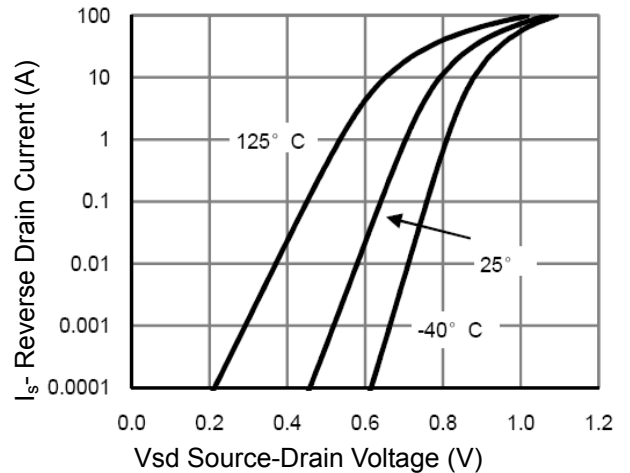
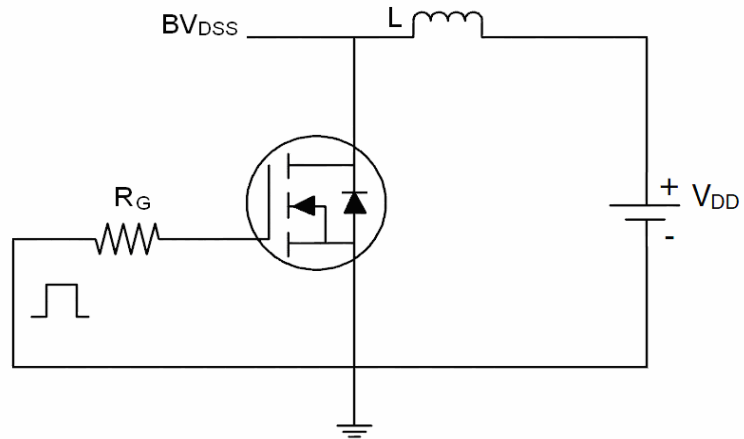


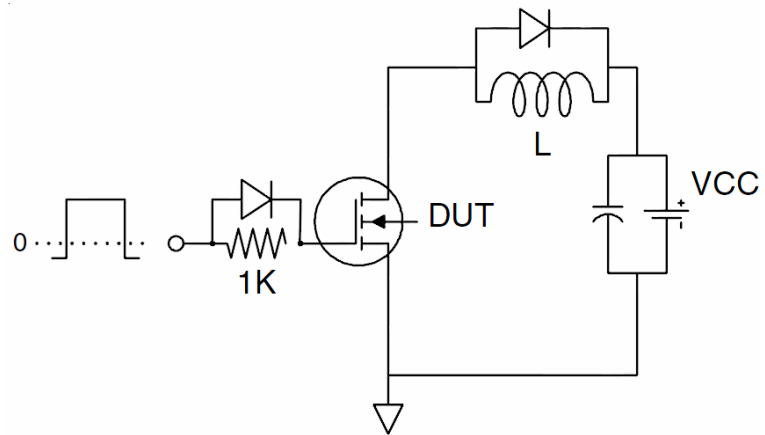
Figure 6 Source- Drain Diode Forward

Test Circuit

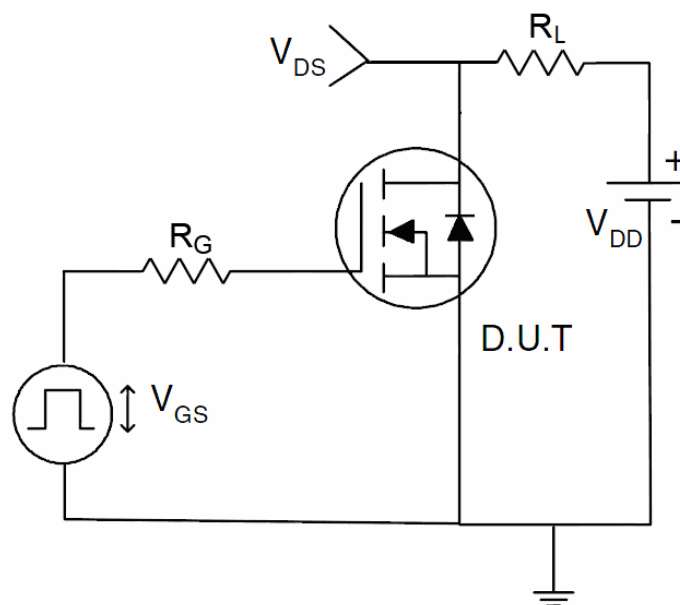
1) E_{AS} test Circuit



2) Gate charge test Circuit



3) Switch Time Test Circuit



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