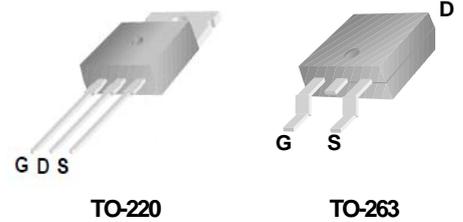
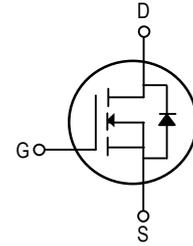


**Features**

- 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<sub>A</sub>=25°C unless otherwise noted)

Symbol	Parameter	Maximum	Unit
V <sub>DSS</sub>	Drain-to-Source Voltage	60	V
V <sub>GSS</sub>	Gate-to-Source Voltage	±25	V
I <sub>D</sub> <sup>3</sup>	Continuous Drain Current	T <sub>C</sub> =25°C	80
		T <sub>C</sub> =100°C	66
I <sub>DP</sub> <sup>4</sup>	Pulsed Drain Current	T <sub>C</sub> =25°C	320
EAS <sup>5</sup>	Avalanche energy	242	mJ
PD	Maximum Power Dissipation	T <sub>C</sub> =25°C	125
T <sub>J</sub> , T <sub>STG</sub>	Junction & Storage Temperature Range	-55~175	°C

**Thermal Characteristics**

Symbol	Parameter	Typical	Unit
Rθ <sub>jc</sub>	Thermal Resistance-Junction to Case	1.0	°C/W
Rθ <sub>ja</sub>	Thermal Resistance-Junction to Ambient	62.5	

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

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

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

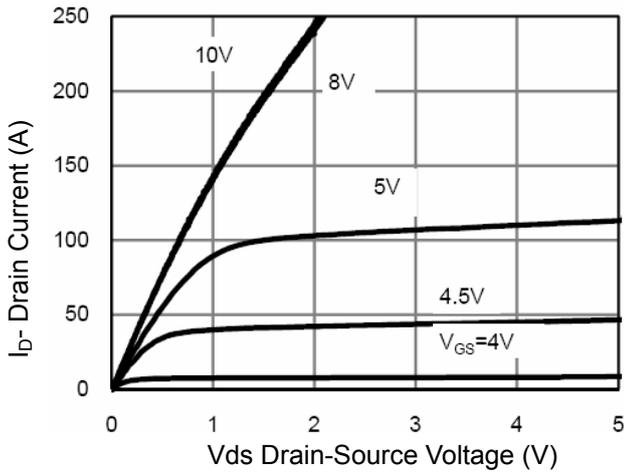
2: Guaranteed by design, not subject to production testing.

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

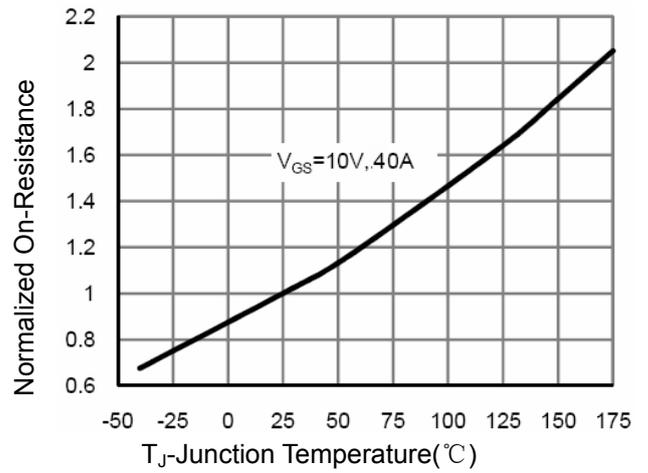
4: Repetitive rating, pulse width limited by max junction temperature.

5: Starting T<sub>J</sub> = 25°C, L = 1mH, I<sub>AS</sub> = 22A.

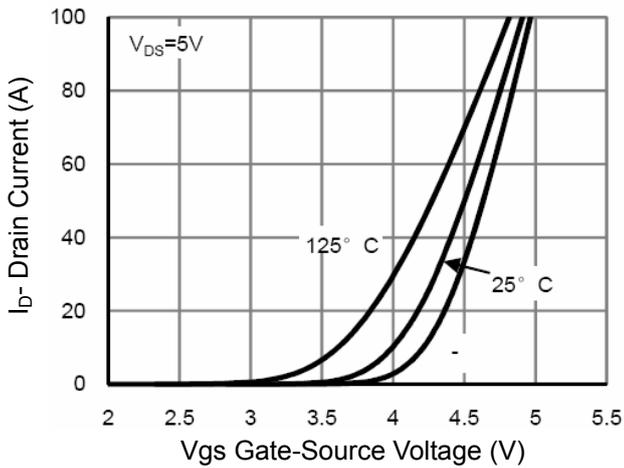
**Typical Operating Characteristics**



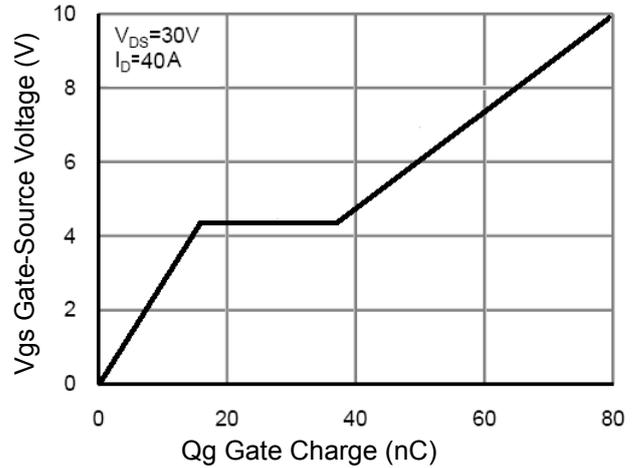
**Figure 1 Output Characteristics**



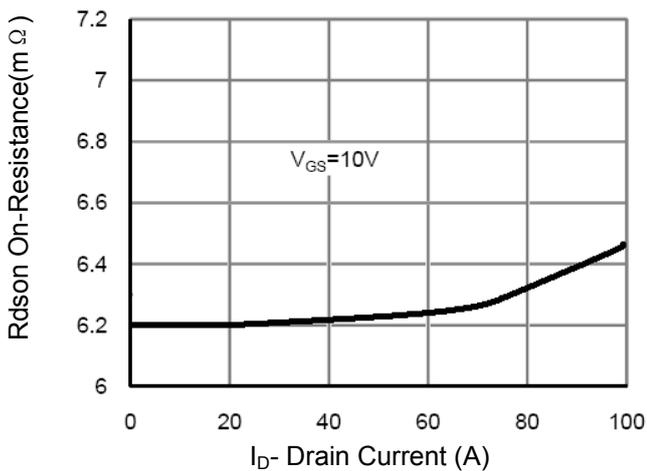
**Figure 4 Rdson-Junction Temperature**



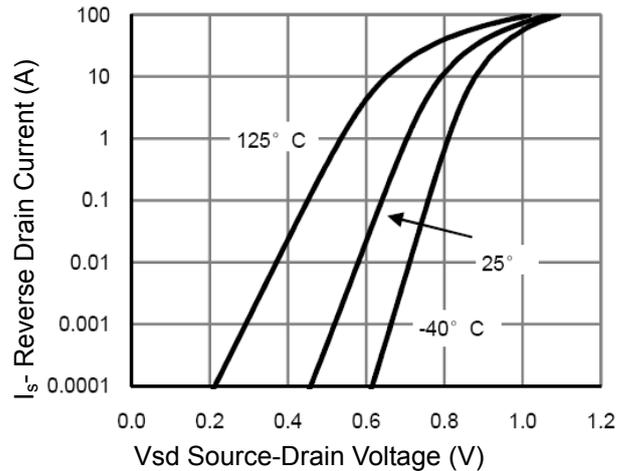
**Figure 2 Transfer Characteristics**



**Figure 5 Gate Charge**



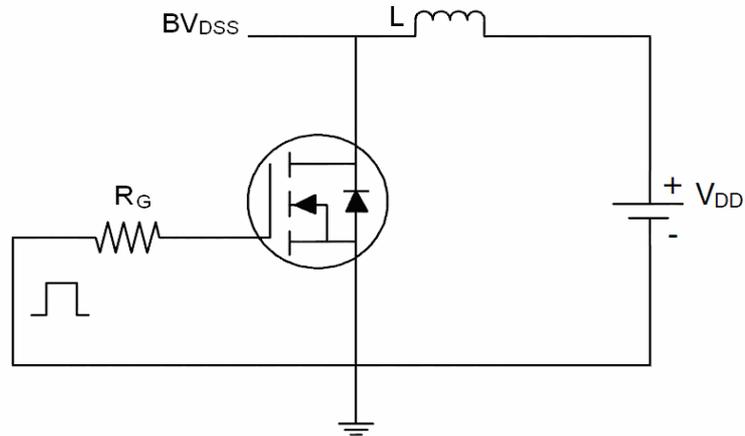
**Figure 3 Rdson- Drain Current**



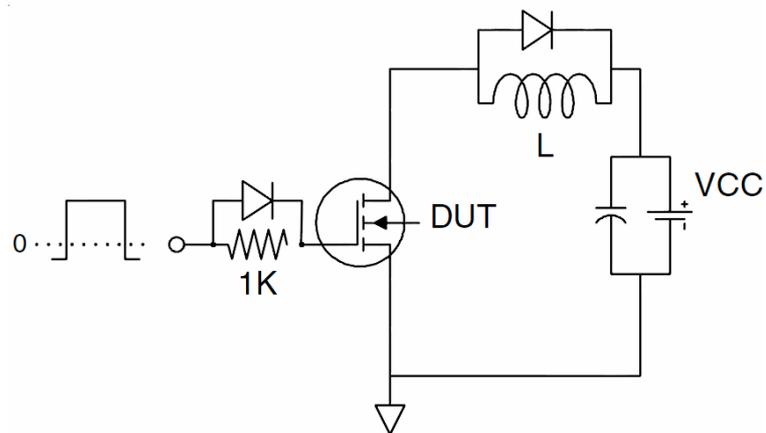
**Figure 6 Source- Drain Diode Forward**

**Test Circuit**

**1)  $E_{AS}$  test Circuit**



**2) Gate charge test Circuit**



**3) Switch Time Test Circuit**

