$80V_{DS}$／$\pm25V_{GS}$／$70A(I_D)$ N-Channel Enhancement Mode MOSFET

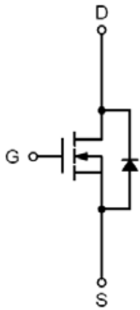
Features

- V_{DSS}=80V／V_{GSS}=±25V／I_D=70A
  $R_{DS(ON)}$=11mΩ(Max.)@V_{GS}=10V
- Avalanche Rated
- Reliable and Rugged
- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance

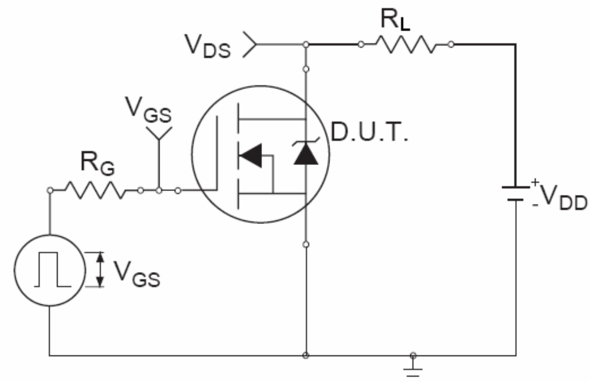
Applications

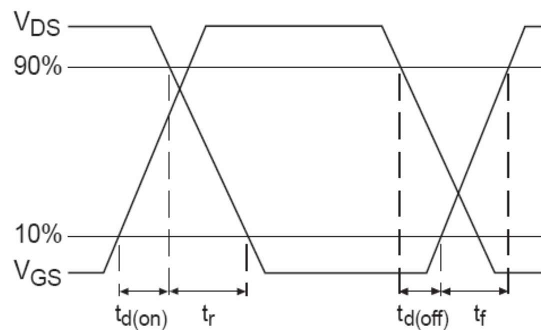
- Synchronous Rectification
- Power Management in Inverter System

Pin Description



Switching Time Test Circuit and Waveforms





$80V_{DS}$ / $\pm25V_{GS}$ / $70A(I_D)$ N-Channel Enhancement Mode MOSFET

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

Symbol	Parameter		Typical	Unit
V_{DSS}	Drain-Source Voltage		80	V
V_{GSS}	Gate –Source Voltage		±25	V
I_D	Continuous Drain Current	T_C=100°C	50	A
		T_C=25°C	70	A
I_{DP}	300us Pulsed Drain Current Tested		280	A
I_S	Diode Continuous Forward Current		70	A
EAS	Single PulseAvalanche Energy		550	mJ
T_J	Operating Junction Temperature		175	°C
T_{STG}	Storage Temperature Range		-55 ~ 175	°C

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	80			V
$\Delta BV_{DSS}/\Delta T_J$	Breakdown Voltage Temp. Coe			0.073		
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-24V,V_{GS}=0V			1	uA
		T_J=85°C			30	
$V_{GS(th)}$	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		8	11	mΩ
Diode Characteristics						
V_{SD}[1]	Diode Forward Voltage	I_{SD}=20A,V_{GS}=0V		0.8	1.3	V
t_{rr}	Reverse Recovery Time	I_{SD}=40A,		50		ns
Q_{rr}	Reverse Recovery Charge	dI_{SD}/dt=100A/us		90		nC
Dynamic Characteristics[2]						
R_G	Gate Resistance	V_{GS}=0V, V_{DS}=0V, Frequency=1MHz		1.3		Ω
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=30V Frequency=1MHz		3000	4200	pF
C_{oss}	Output Capacitance			350		
C_{rss}	Reverse Transfer Capacitance			250		
$t_{d(on)}$	Turn-On Delay Time	V_{DD}=30V,R_L=30Ω I_D=1A,V_{GEN}=10V R_G=6Ω		22	40	ns
t_r	Turn-On Rise Time			14	25	
$t_{d(off)}$	Turn-Off Delay Time			58	104	
t_f	Turn-Off Fall Time			25	45	
Gate Charge Characteristics[2]						
Q_g	Total Gate Charge	V_{DS}=40V,V_{GS}=10V I_D=40A		77	108	nC
Q_{gs}	Gate-Source Charge			22		
Q_{gd}	Gate-Drain Charge			23		

Note: 1: Pulse test ; pulse width ≦ 300ns, duty cycle ≦ 2%.

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

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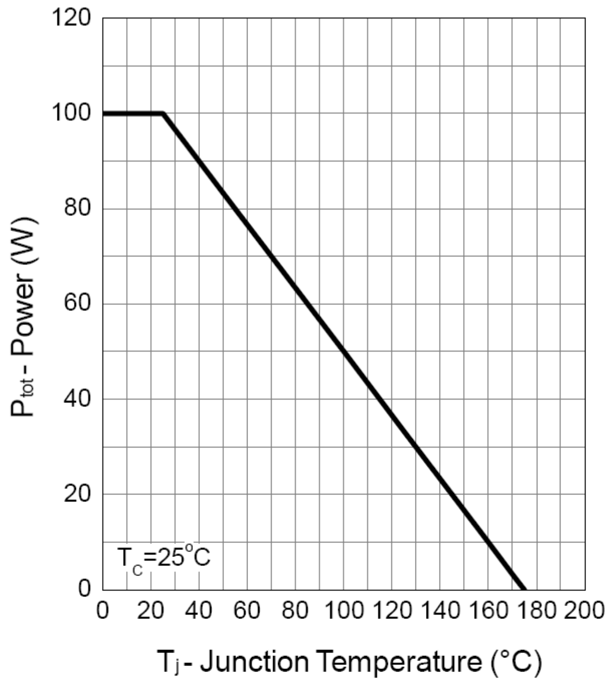
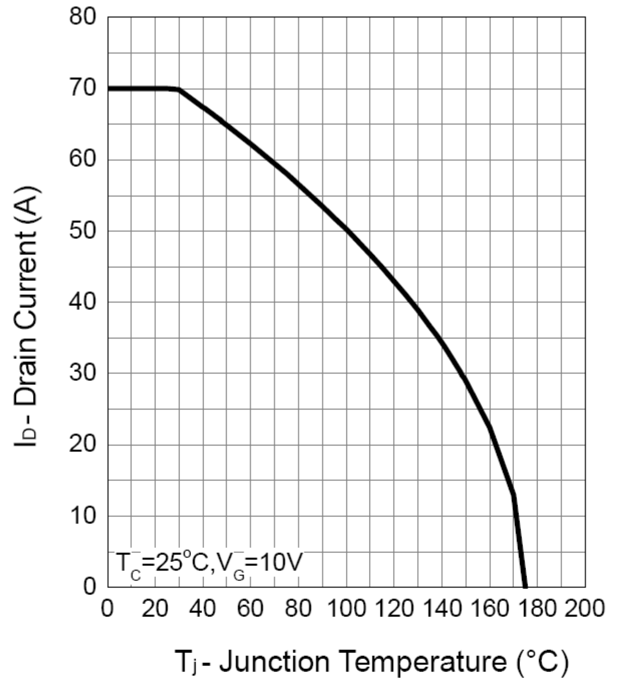
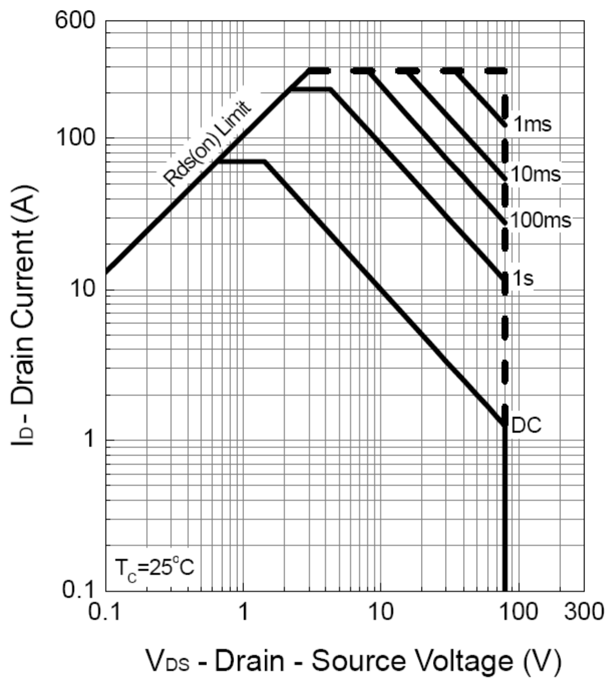
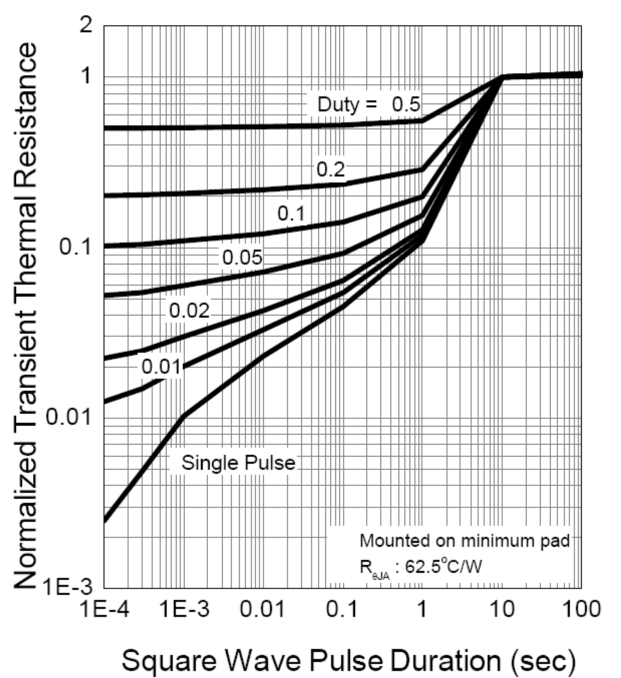
Typical Characteristics



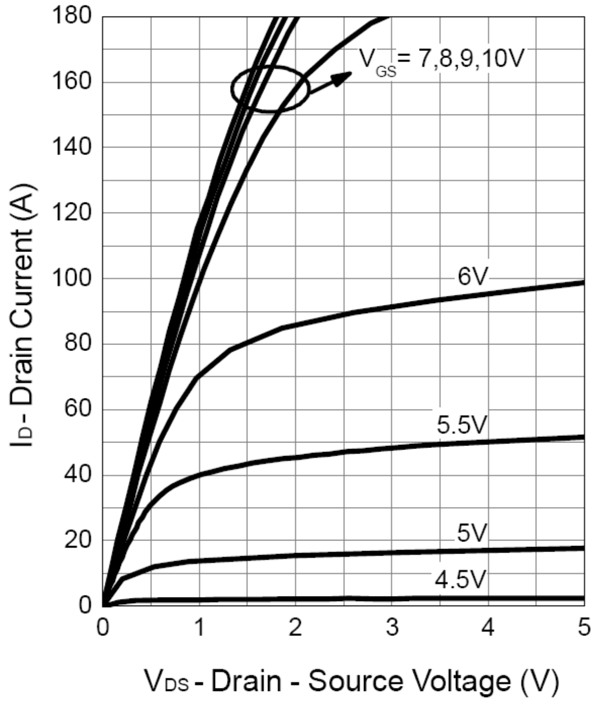


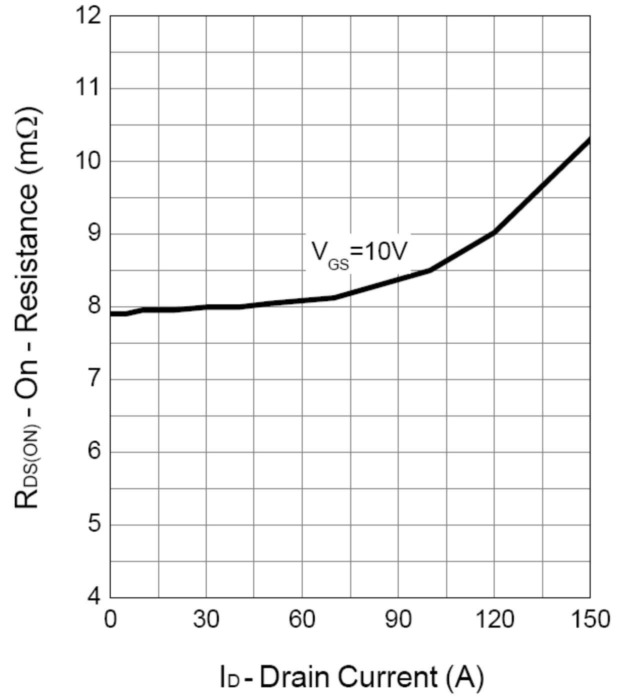


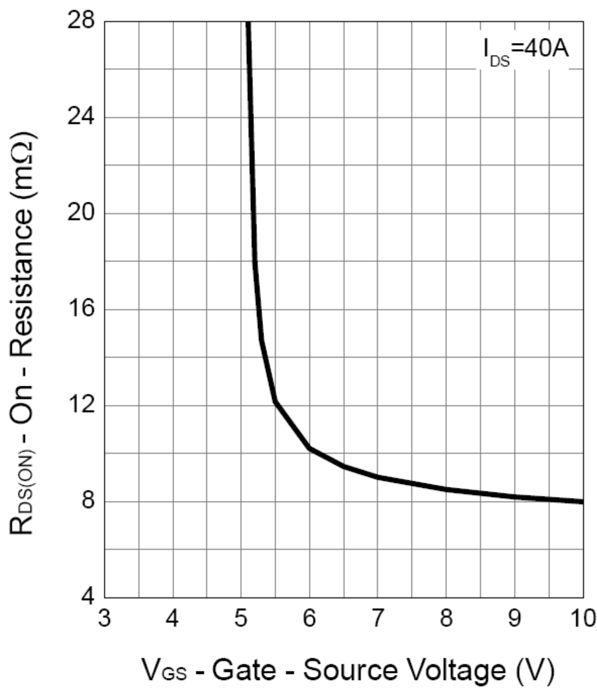


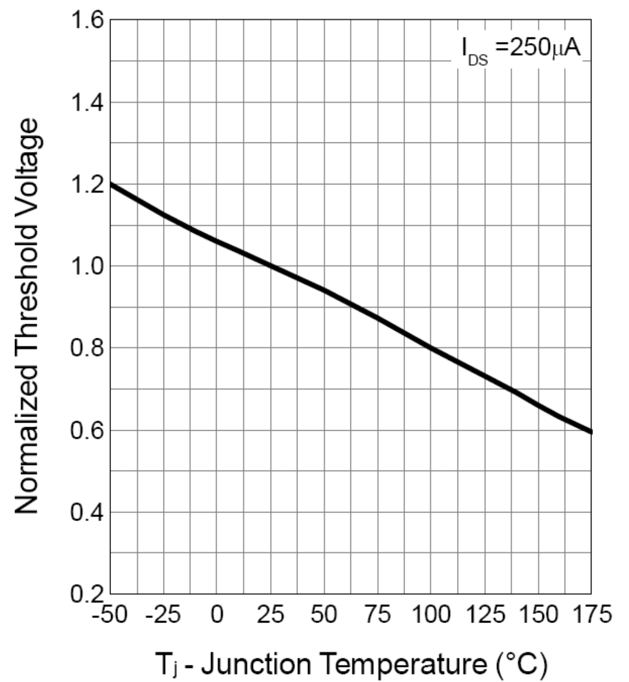
80V

Typical Characteristics (Cont.)









80V$_{DS}$／±25V$_{GS}$／70A(I$_D$) N-Channel Enhancement Mode MOSFET

Typical Characteristics (Cont.)