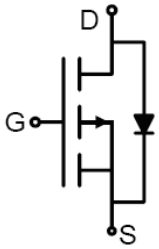
Features

- V_{DS}=-100V,I_D= -19A
  $R_{DS(ON)}$< 103mΩ @ V_{GS}= -10V
  $R_{DS(ON)}$< 117mΩ @ V_{GS}=-4.5V
- High Power and current handing capability
- Lead free product is acquired

Application

- Power Management Switches
- Portable equipment and battery powered systems

100%UIS TESTED!
100%ΔVds TESTED!



Schematic Diagram

TO-252(DPAK)top view

Table 1. Absolute Maximum Ratings(T_A=25℃unless otherwise noted)

Symbol	Parameter	Limit	Unit
V_{DS}	Drain-Source Voltage(V_{GS}=0V)	-100	V
V_{GS}	Gate-Source Voltage(V_{DS}=0V)	±20	V
I_D	Drain Current-Continuous(T_C=25℃)	-19	A
	Drain Current-Continuous(T_C=100℃)	-13.5	A
$I_{DM\ (pluse)}$	Drain Current-Continuous@ Current-Pulsed(Note1)	-76	A
P_D	Maximum Power Dissipation(T_C=25℃)	79	W
	Maximum Power Dissipation(T_C=100℃)	39.5	W
E_{AS}	Avalanche energy(Note2)	156	mJ
T_J,T_{STG}	Operating Junction and Storage Temperature Range	-55To175	℃

Table 2. Thermal Characteristic

Symbol	Parameter	Typ	Max	Unit
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case		1.9	℃/W

Table 3. Electrical Characteristics (T_J=25℃unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0VI_D=-250μA	-100	-121		V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-100V,V_{GS}=0V			-1	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS}=±20V,V_{DS}=0V			±100	nA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=-250μA	-1	-1.8	-2.5	V
g_{FS}	Forward Trans conductance	V_{DS}=-5V,I_D=-10A		26		S
$R_{DS(ON)}$	Drain-Source On-State Resistance	V_{GS}=-10V,I_D=-10A		86	103	mΩ
		V_{GS}=-4.5V,I_D=-8A		90	117	mΩ
Dynamic Characteristics						
C_{iss}	Input Capacitance	VDS=-25V,VGS=0V, f=1.0MHz		3700		pF
C_{oss}	Output Capacitance			90		pF
C_{rss}	Reverse Transfer Capacitance			32		pF
Switching Parameters						
$t_{d(on)}$	Turn-on Delay Time	VGS=-10V,VDS=-50V, RL=5Ω,RGEN=9.1Ω		6		nS
t_r	Turn-on Rise Time			29		nS
$t_{d(off)}$	Turn-Off Delay Time			17		nS
t_f	Turn-Off Fall Time			24		nS
Q_g	Total Gate Charge	V_{GS}=-10V,V_{DS}=-50V,I_D=-10A		72		nC
Q_{gs}	Gate-Source Charge			8.4		nC
Q_{gd}	Gate-Drain Charge			17.3		nC
Source-Drain Diode Characteristics						
I_{SD}	Source-Drain Current (Body Diode)				-19	A
V_{SD}	Forward on Voltage(Note3)	V_{GS}=0V,I_S=-10A			-1.2	V
t_{rr}	Reverse Recovery Time	I_F=-15A,di/dt=100A/μs		32		ns
Q_{rr}	Reverse Recovery Charge	I_F=-15A,di/dt=100A/μs		53		nC

Notes1.RepetitiveRating:Pulsewidth limited by maximum junction temperature.
Notes2.EAScondition: TJ=25℃,VDD=50V,VG=-10V,Rg=25Ω,L=0.5mH.
Notes3.RepetitiveRating:Pulsewidthlimited by maximum junction temperature.

Typical Electrical And Thermal Characteristics(Curves)

Figure1.OutputCharacteristics

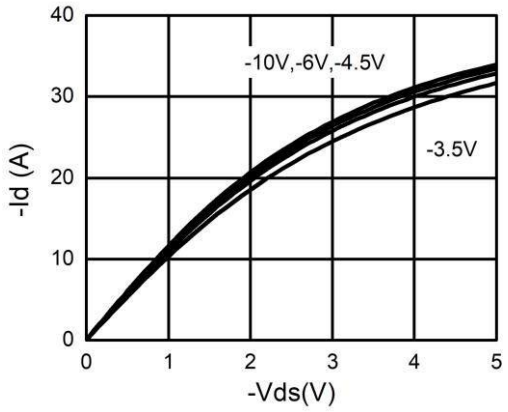


Figure2.TransferCharacteristics

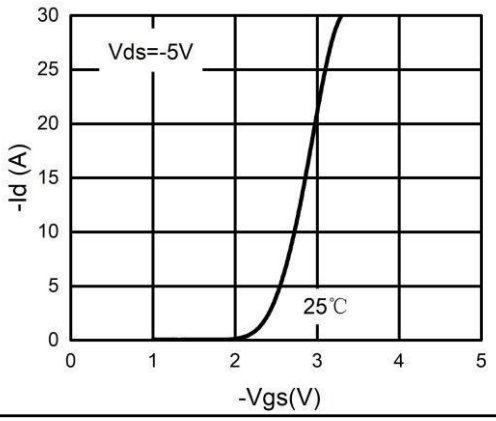


Figure3.PowerDissipation

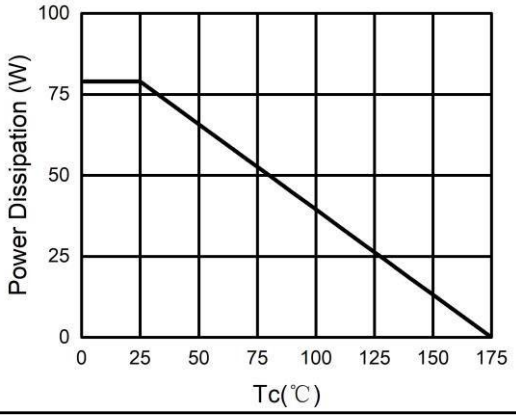


Figure4.DrainCurrent

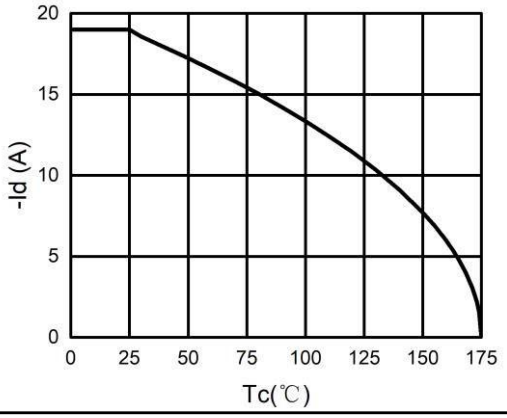


Figure5.BV_{DSS}vs Junction Temperature

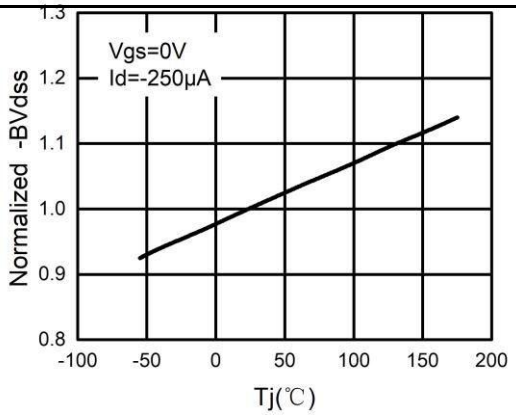


Figure6.$R_{DS(ON)}$ vs Junction Temperature

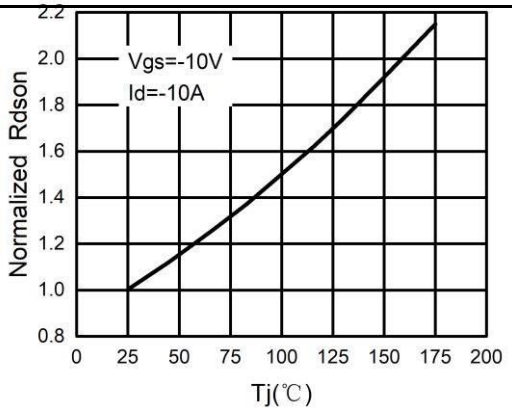


Figure7.GateChargeWaveforms

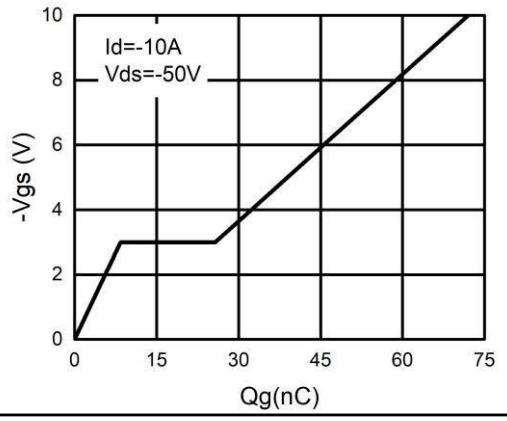


Figure8.Capacitance

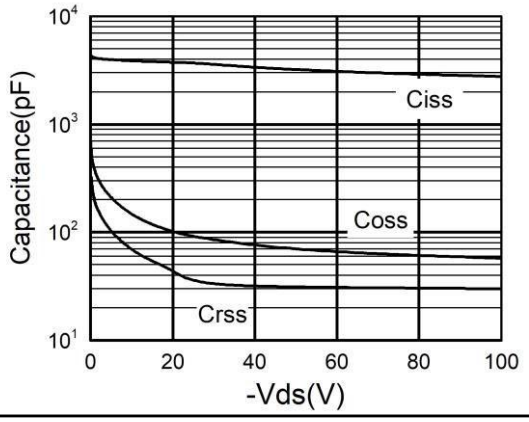


Figure9.Body-DiodeCharacteristics

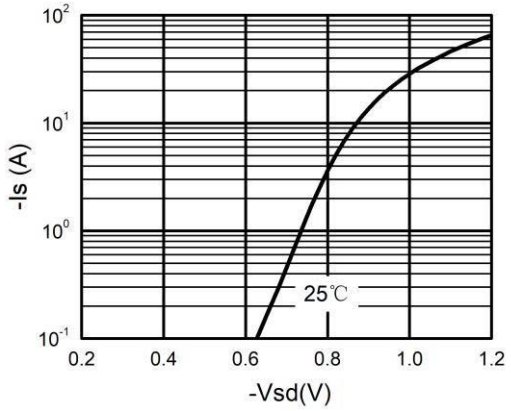
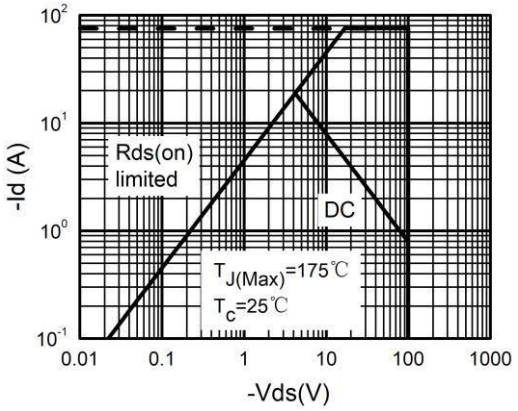
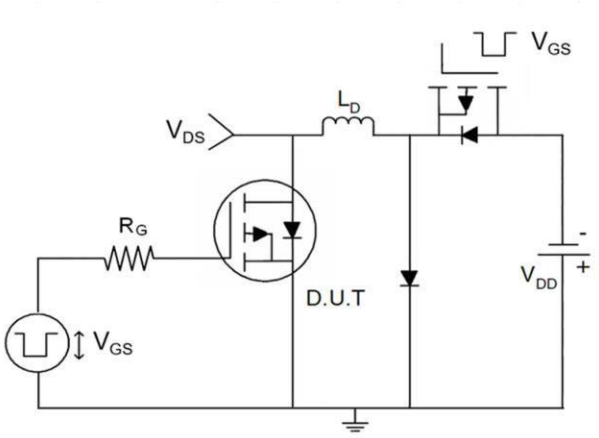


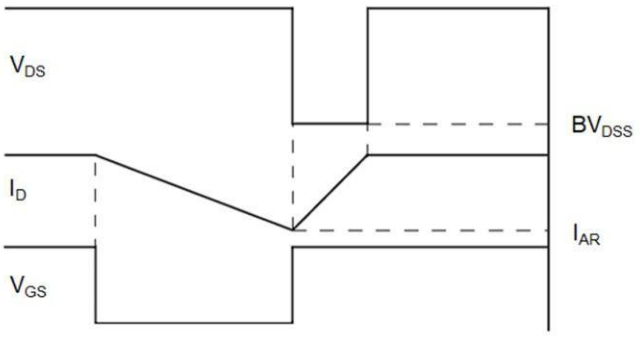
Figure10.MaximumSafeOperatingArea



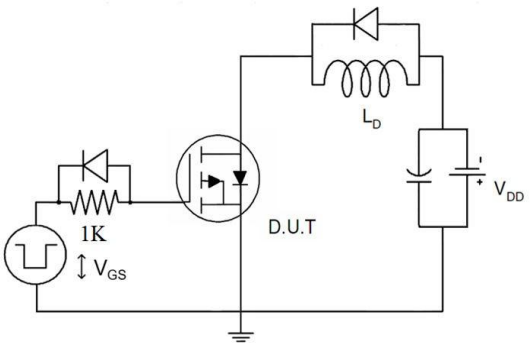
Test Circuit

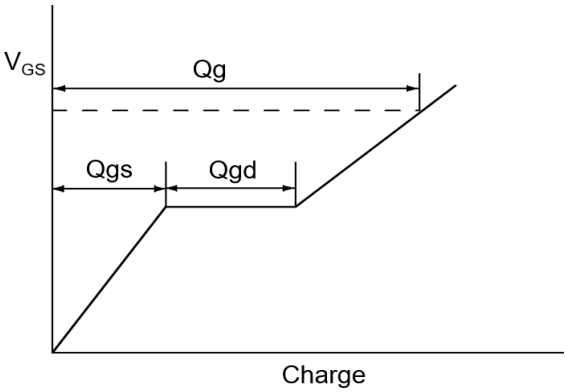
1) E_{AS}Test Circuits



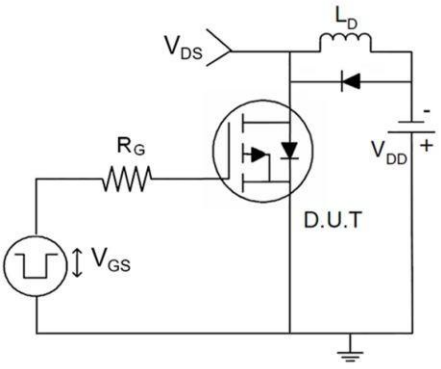


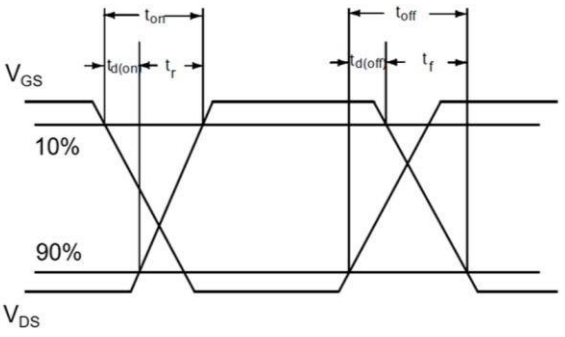
2) Gate Charge Test Circuit



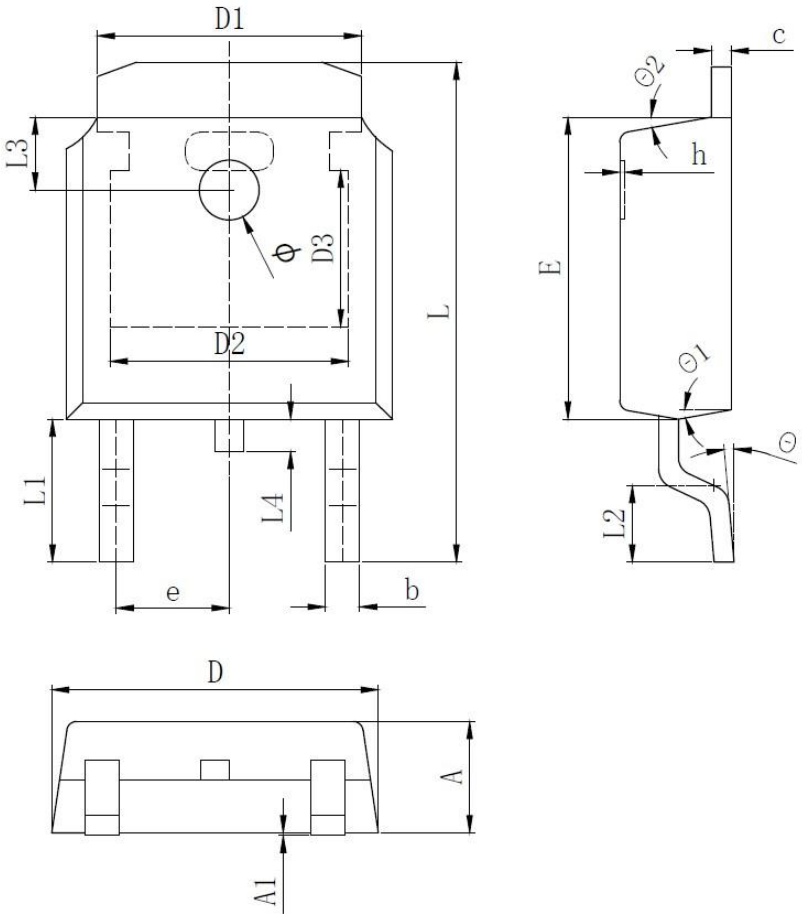


3) Switch Time Test Circuit





TO-252PackageInformation



SYMBOL	MILLIMETER		
	MIN	Typ.	MAX
A	2.200	2.300	2.400
A1	0.000		0.127
b	0.640	0.690	0.740
c(电镀后)	0.460	0.520	0.580
D	6.500	6.600	6.700
D1	5.334 REF		
D2	4.826 REF		
D3	3.166 REF		
E	6.000	6.100	6.200
e	2.286 TYP		
h	0.000	0.100	0.200
L	9.900	10.100	10.300
L1	2.888 REF		
L2	1.400	1.550	1.700
L3	1.600 REF		
L4	0.600	0.800	1.000
Φ	1.100	1.200	1.300
θ	0°		8°
θ1	9° TYP		
θ2	9° TYP		