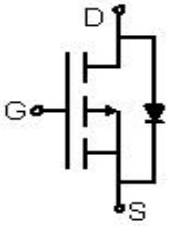
Main Product Characteristics:

V_{DSS}	-60V
$R_{DS}(on)$	31mΩ
I_D	-26A

TO-252 (DPAK)

Marking and Pin Assignments



Schematic Diagram

Features and Benefits:

- Advanced MOSFET process technology
- Special designed for PWM, load switching and general purpose applications
- Ultra low on-resistance with low gate charge
- Fast switching and reverse body recovery
- 150℃ operating temperature

Description:

It utilizes the latest processing techniques to achieve the high cell density and reduces the on-resistance with high repetitive avalanche rating. These features combine to make this design an extremely efficient and reliable device for use in power switching application and a wide variety of other applications.

Absolute Max Rating:

Symbol	Parameter	Max.	Units
I_D @ T_C = 25°C	Continuous Drain Current, V_{GS} @ 10V①	-26	A
I_{DM}	Pulsed Drain Current②	-60	
P_D @T_C = 25°C	Power Dissipation③	60	W
V_{DS}	Drain-Source Voltage	-60	V
V_{GS}	Gate-to-Source Voltage	± 20	V
T_J T_{STG}	Operating Junction and Storage Temperature Range	-55 to +150	°C

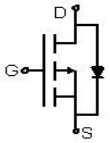
Thermal Resistance

Symbol	Characteristics	Typ.	Max.	Units
$R_{\theta JA}$	Thermal Resistance,Junction-to-Ambient④	—	25	℃/W

Electrical Characteristics @T_A=25℃unless otherwise specified

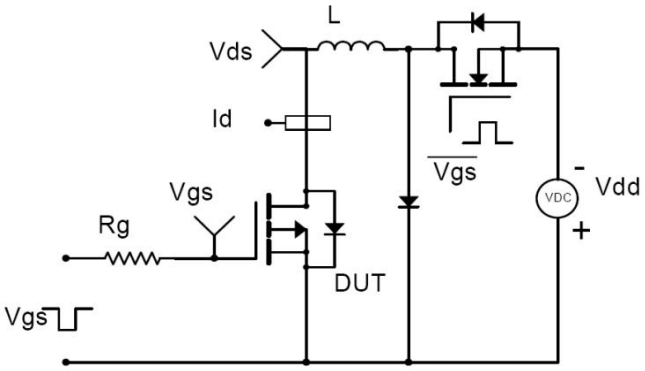
Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source breakdown voltage	-60	—	—	V	V_{GS} = 0V, I_D = 250μA
$R_{DS(on)}$	Static Drain-to-Source on-resistance	—	31	40	mΩ	V_{GS}=-10V, I_D=-20A
		—	42	55		V_{GS}=-4.5V, I_D=-20A
$V_{GS(th)}$	Gate threshold voltage	-1	—	-2.5	V	V_{DS} = V_{GS}, I_D =-250μA
I_{DSS}	Drain-to-Source leakage current	—	—	1	μA	V_{DS}=-48V,V_{GS}=0V
I_{GSS}	Gate-to-Source forward leakage	—	—	±100	nA	V_{GS}=±20V,V_{DS}=0V
g_{FS}	Forward Transconductance	5	—	—	S	V_{DS}=-5V,I_D=-20A
Q_g	Total gate charge	—	48	—	nC	V_{DS}=-30V
Q_{gs}	Gate-to-Source charge	—	11	—		I_D=-20A
Q_{gd}	Gate-to-Drain("Miller") charge	—	10	—		V_{GS}=-10V
$t_{d(on)}$	Turn-on delay time	—	14	—	ns	V_{DS}=-30V
t_r	Rise time	—	20	—		V_{GS}=-10V
$t_{d(off)}$	Turn-Off delay time	—	40	—		R_{GEN}=3Ω
t_f	Fall time	—	19	—		I_D=-1A
C_{iss}	Input capacitance	—	3060	—	pF	V_{DS}=-30V
C_{oss}	Output capacitance	—	300	—		V_{GS}=0V
C_{rss}	Reverse transfer capacitance	—	205	—		f=1.0MHz

Source-Drain Ratings and Characteristics

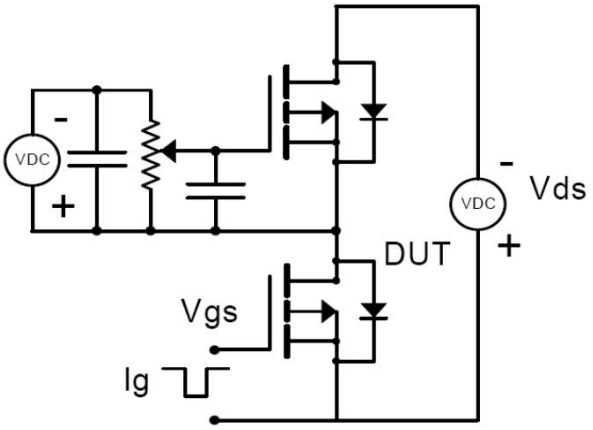
Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode)	—	—	-26	A	MOSFET symbol showing the integral reverse p-n junction diode 
I_{SM}	Pulsed Source Current (Body Diode)	—	—	-60	A	
V_{SD}	Diode Forward Voltage	—	-0.72	-1	V	V_{GS}=0V,I_S=-1A
trr	Reverse Recovery Time	—	40	—	ns	I_F=-20A, dI/dt=100A/μs
Qrr	Reverse Recovery Charge	—	56	—	nC	

Test Circuits and Waveforms

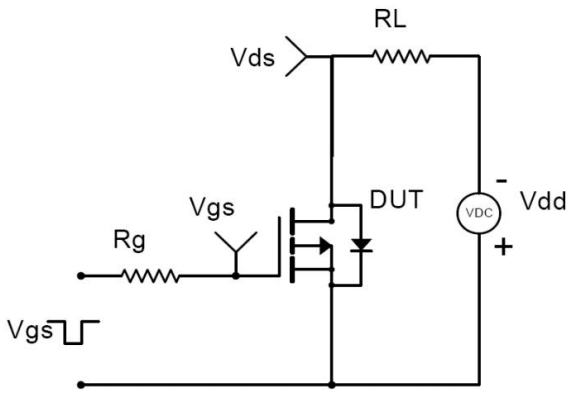
EAS Test Circuit:



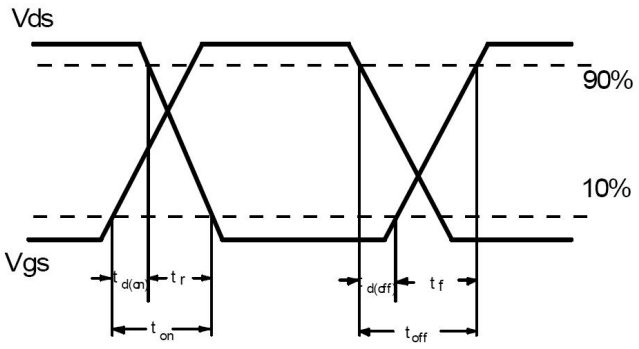
Gate Charge Test Circuit:



Switching Time Test Circuit:



Switching Waveforms:



Notes:

①Calculated continuous current based on maximum allowable junction temperature.

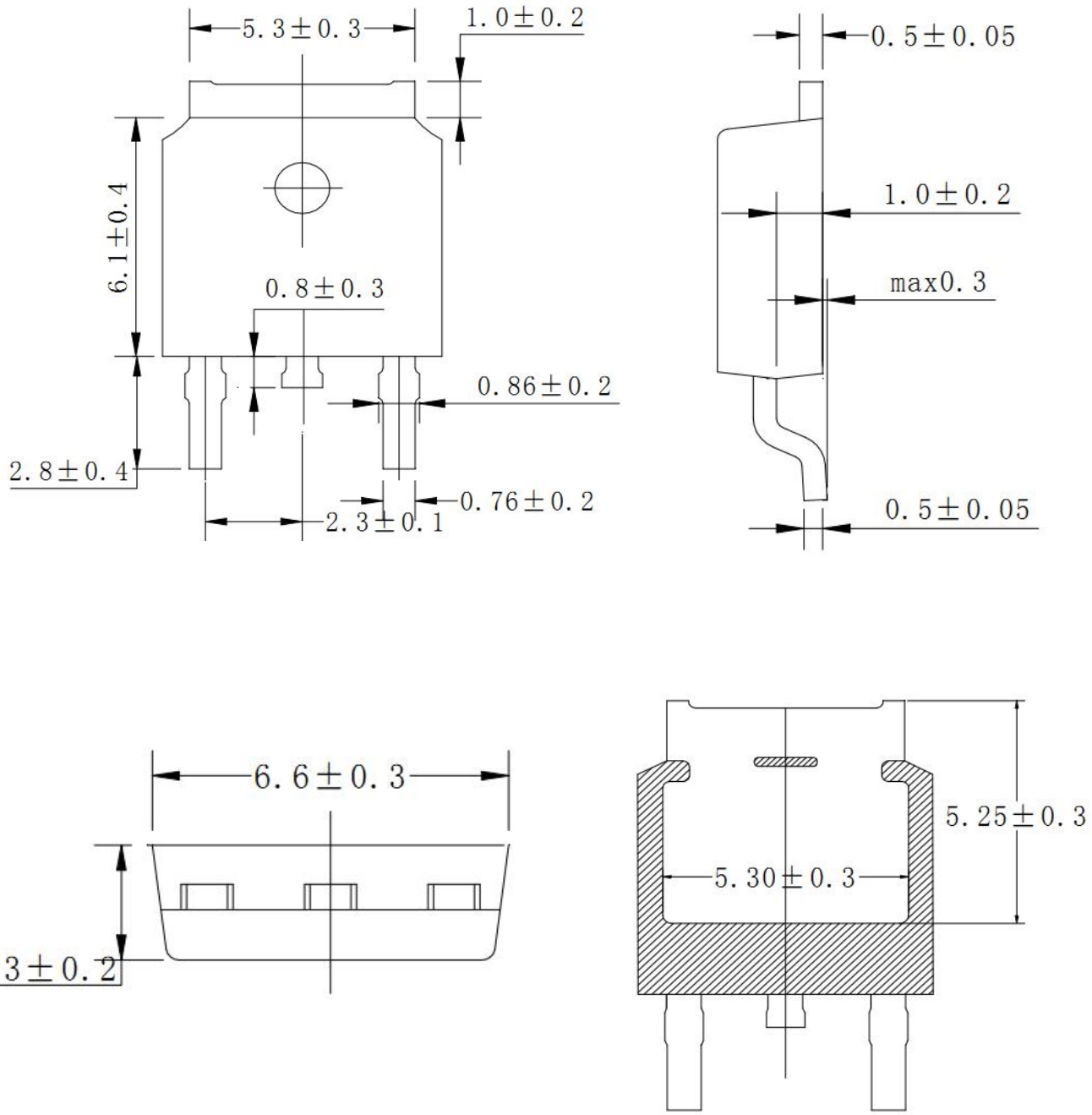
②Repetitive rating; pulse width limited by max. junction temperature.

③The power dissipation PD is based on max. junction temperature, using junction-to-case thermal resistance.

④The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with TA =25°C.

Mechanical Data：

TO-252 Package Outline (Unit : mm)



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