承 认 书

SPECIFICATION FOR APPROVAL

客户： 佛山电器照明股份有限公司

CUSTOMER：

日期：

DATE： 2016 年 12 月 13 日

厂牌：

型号： 25N06G

TYPE NUMBER：

重庆平伟实业股份有限公司

CHONGQING PINGWEI ENTERPRISE CO., LTD.

公司总部地址：梁平县梁山镇皂角村双桂工业园

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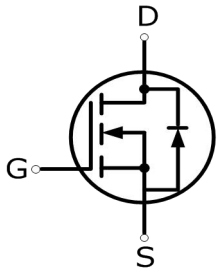
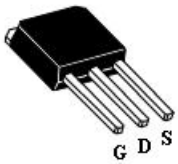
电话：0757-22231276 传真：0757-22207853

POWER MOSFET

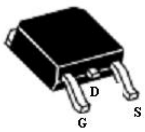
Featutes

- 25A,60V,$R_{DS(ON)MAX}$=0.036Ω @V_{GS}=10V/12.5A
- Low gate charge
- Low C_{iss}
- Fast switching
- 100% avalanche tested
- Improved dv/dt capability





TO-251(IPAK)
25N06D



TO-252(DPAK)
25N06G

Absolute Maximum Ratings(T_C=25℃,unless otherwise noted)

Parameter	Symbol	25N06D&25N06G	UNIT
Drain-Source Voltage	V_{DSS}	60	V
Gate-Source Voltage	V_{GSS}	±20	
Continuous Drain Current	I_D	25	A
Pulsed Drain Current(Note1)	I_{DM}	100	
Single Pulse Avalanche Energy (Note 2)	E_{AS}	100	mJ
Avalanche Current(Note1)	I_{AR}	20	A
Repetitive Avalanche Energy (Note1)	E_{AR}	4	mJ
Reverse Diode dV/dt (Note 3)	dv/dt	5.0	V/ns
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55to+150	℃
Maximum lead temperature for soldering purposes, 1/8″from case for 5 seconds	T_L	260	℃

Thermal Characteristics

Parameter		Symbol	25N06D&25N06G	Units
Thermal resistance , Junction to Case		$R_{th(J-c)}$	2.5	℃/W
Thermal resistance , Channel to Case		$R_{th(ch-c)}$	2.5	℃/W
Thermal resistance , Channel to Ambient		$R_{th(ch-a)}$	62.5	℃/W
Maximum Power Dissipation	T_C=25℃	P_D	50	W

Electrical Characteristics (T_c=25℃,unless otherwise noted)						
Parameter	**Symbol**	**Test Conditions**	**Mix**	**Typ**	**Max**	**Units**
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V,I_D=250uA	60	—	—	V
Breakdown Temperature Coefficient	ΔBV_{DSS} /ΔT_J	Reference to 25℃, I_D=250uA	—	0.05	—	V/℃
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=48V,V_{GS}=0V	—	—	1	uA
Gate-Body Leakage Current,Forward	I_{GSSF}	V_{GS}=20V,V_{DS}=0V	—	—	100	nA
Gate-Body Leakage Current,Reverse	I_{GSSR}	V_{GS}=-20V,V_{DS}=0V	—	—	-100	nA
On Characteristics						
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	1.0	—	3.0	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=10A	—	0.025	0.036	Ω
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0V, f=1.0MHZ	—	1296	—	pF
Output Capacitance	C_{oss}		—	117	—	pF
Reverse Transfer Capacitance	C_{rss}		—	87	—	pF
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=30V,I_D=18A, R_G=3.3Ω (Note4,5)	—	8	—	ns
Turn-On Rise Time	t_r		—	19	—	ns
Turn-Off Delay Time	$t_{d(off)}$		—	34	—	ns
Turn-Off Fall Time	t_f		—	7	—	ns
Total Gate Charge	Qg	V_{DS}=30V,I_D=18A, V_{GS}=4.5V, (Note4,5)	—	13	—	nC
Gate-Source Charge	Qgs		—	6.8	—	nC
Gate-Drain Charge	Qgd		—	4	—	nC
Drain-Source Body Diode Charcteristics and Maximum Ratings						
Continuous Diode Forward Current	I_S		—	—	25	A
Pulsed Diode Forward Current	I_{SM}		—	—	100	A
Diode Forward Voltage	V_{SD}	I_S=25A,V_{GS}=0V	—	—	1.5	V
Reverse Recovery Time	t_{rr}	V_{GS}=0V,I_S=25A, dI_F/dt=100A/us, (Note4)	—	53	—	ns
Reverse Recovery Charge	Q_{rr}		—	86	—	uC

Notes

1. Repetitive Rating:pulse width limited by maximum junction temperature .
2. V_{DD}=50V,L=0.5mH,R_g=25Ω,I_{AS}=25A , starling,T_J=25℃.
3. I_{SD}≤I_D,dI/dt=_A/us,V_{DD}≤BV_{DSS},starting T_J=25℃.
4. Pulse width≤300us;duty cycle≤2%.
5. Repetitive rating; pulse width limited by maximum junction temperature.

Test Circuit and Waveform

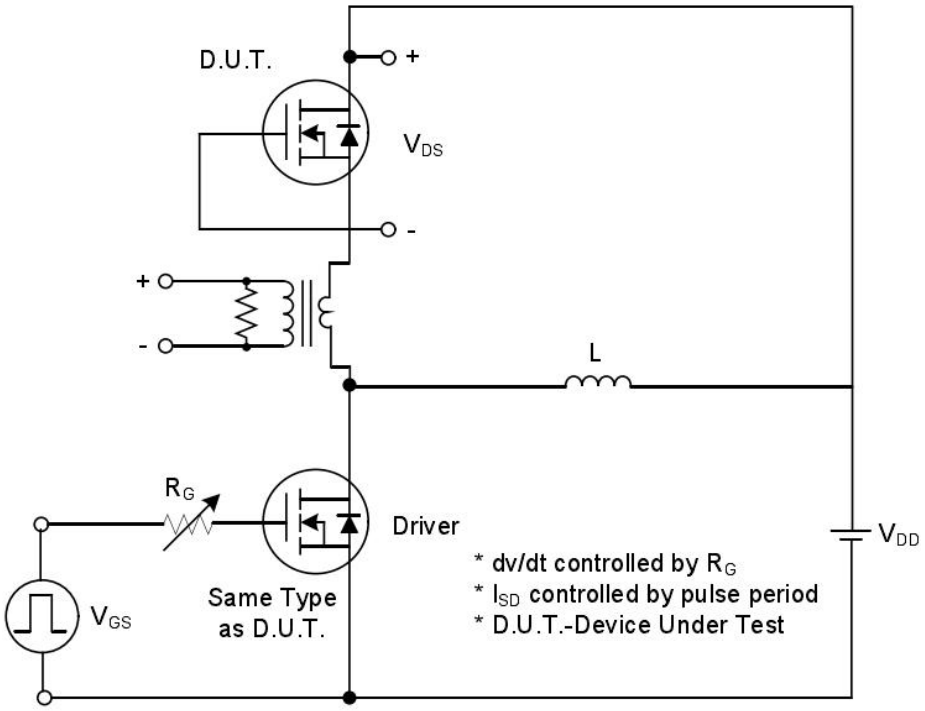


Fig. 1A Peak Diode Recovery dv/dt Test Circuit

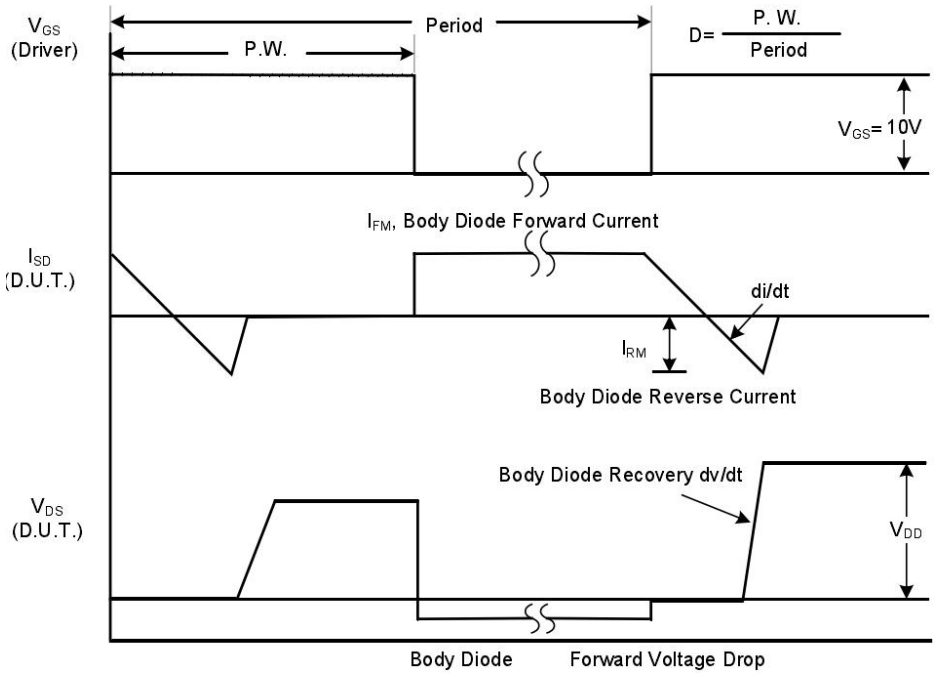


Fig. 1B Peak Diode Recovery dv/dt Waveforms

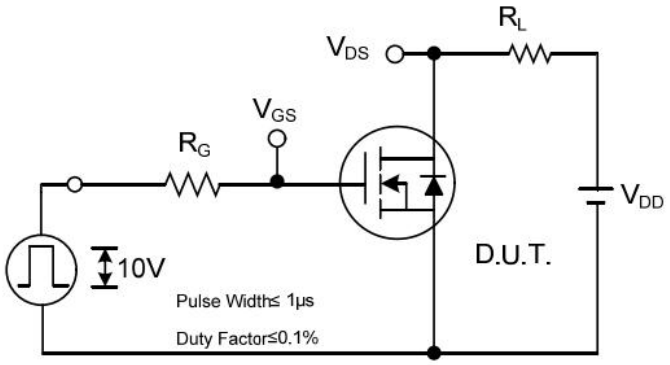


Fig. 2A Switching Test Circuit

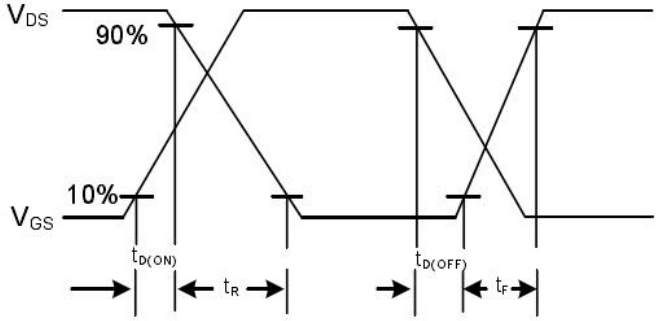


Fig. 2B Switching Waveforms

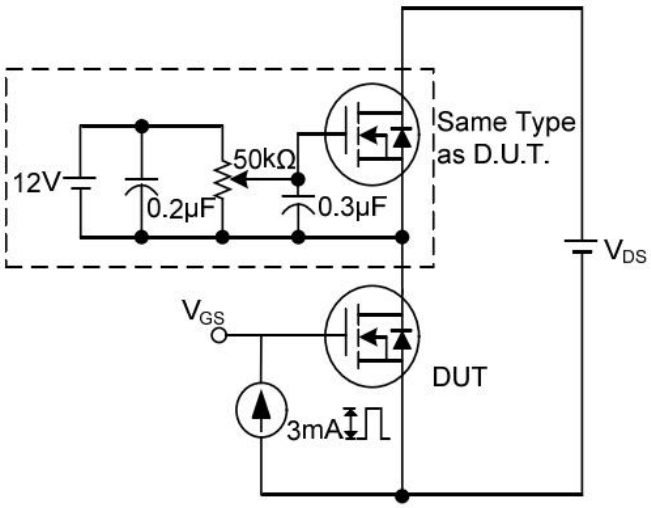


Fig. 3A Gate Charge Test Circuit

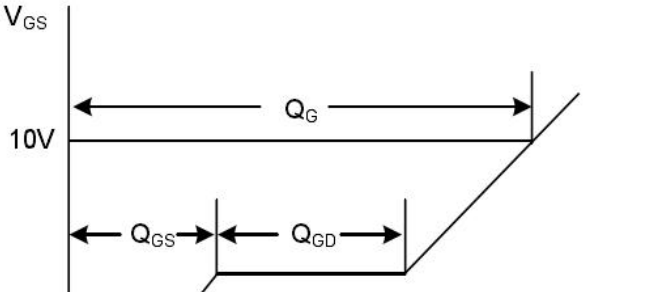


Fig. 3B Gate Charge Waveform

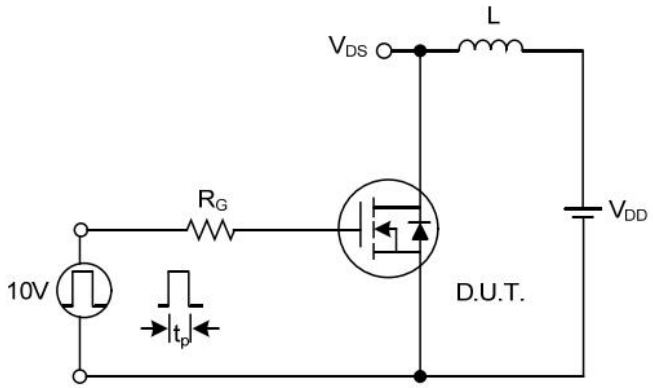


Fig. 4A Unclamped Inductive Switching Test Circuit

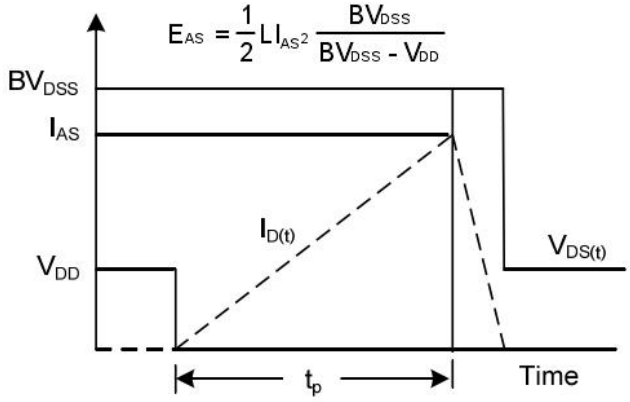
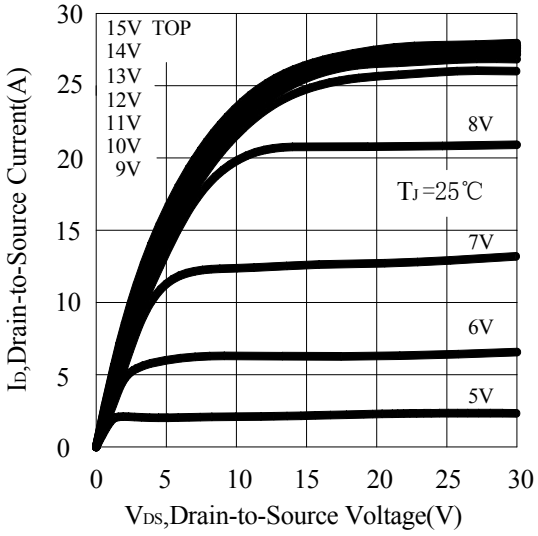
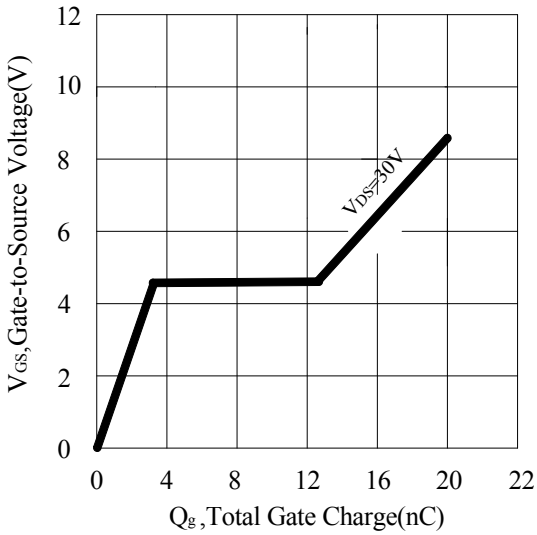
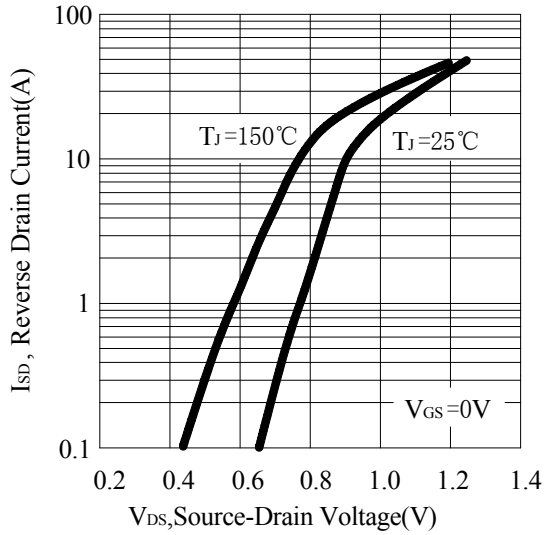


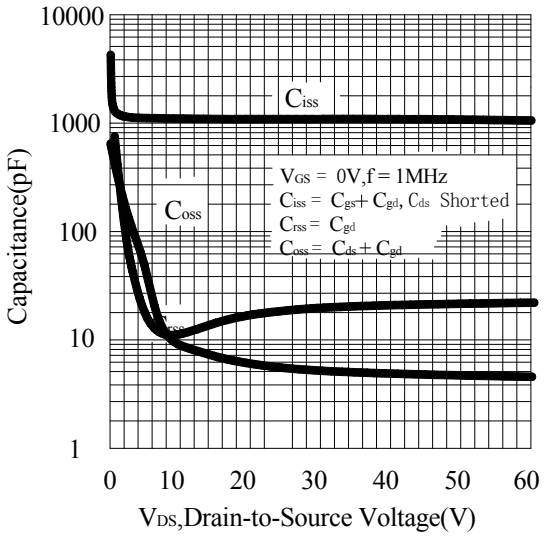
Fig. 4B Unclamped Inductive Switching Waveforms

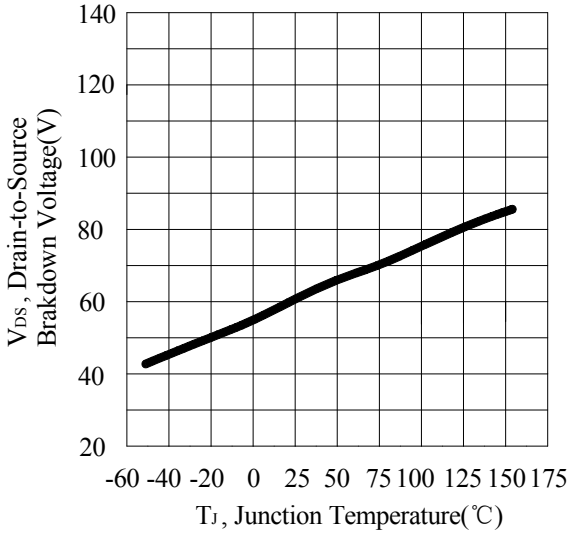
RATINGAND CHARACTERISTIC CURVES

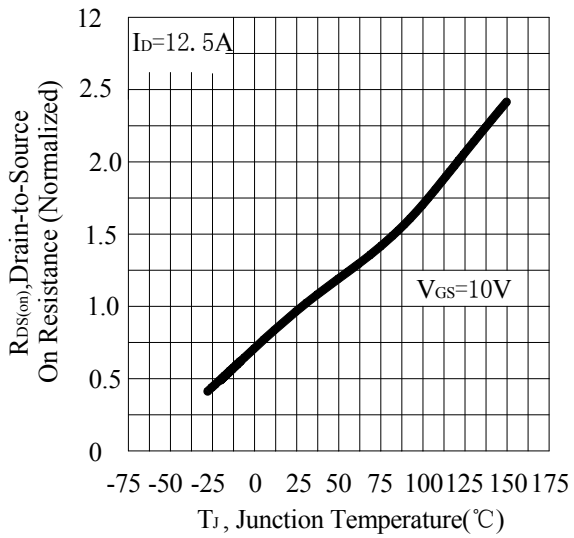


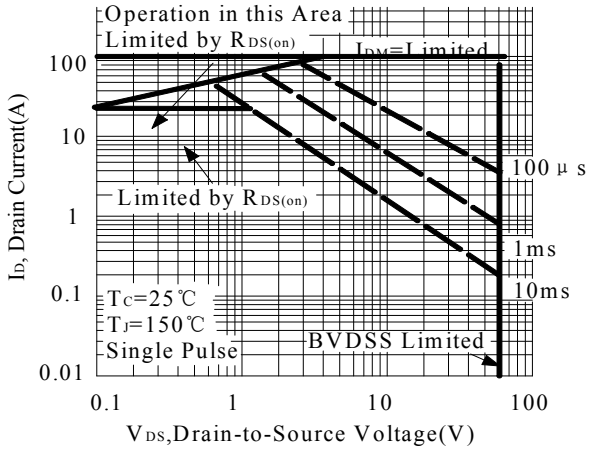


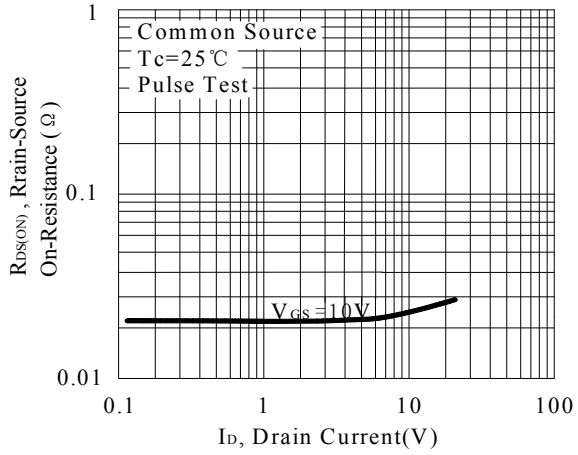


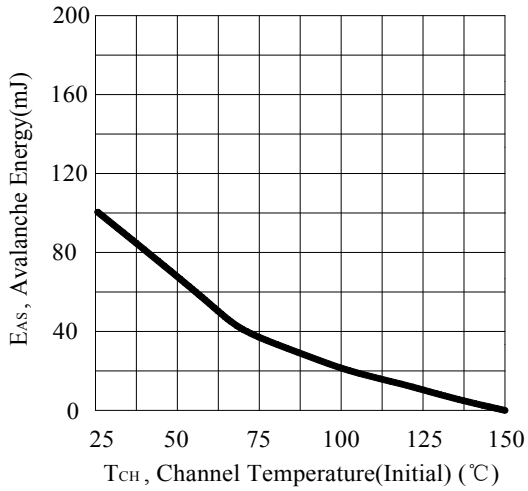


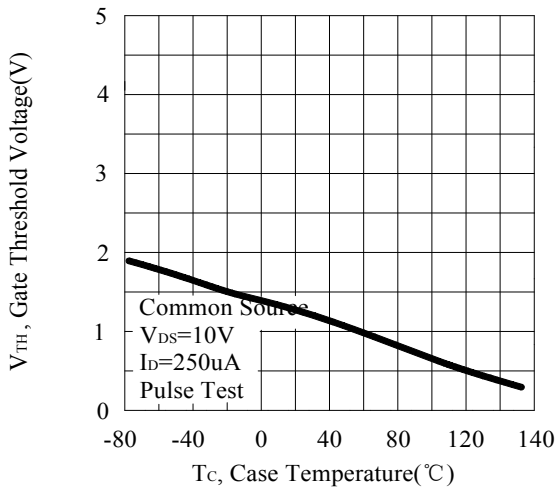


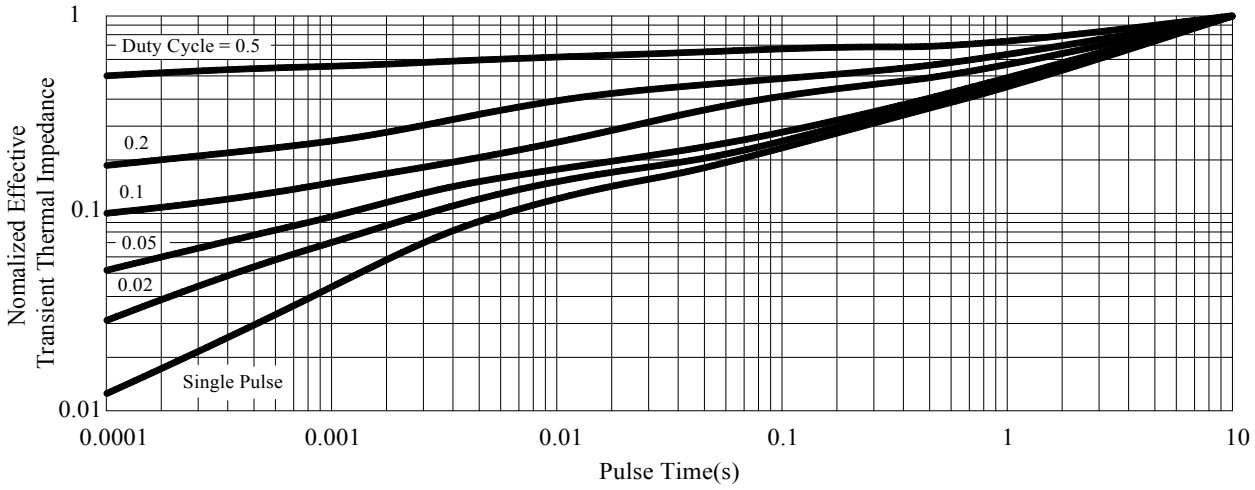



Operation in this Area
Limited by RDS(on)
IDM=Limited
100 μ s
1ms
10ms
Limited by RDS(on)
TC=25℃
TJ=150℃
Single Pulse
BVDSS Limited
ID, Drain Current(A)
VDS,Drain-to-Source Voltage(V)
100
10
1
0.1
0.01
0.1
1
10
100


Common Source
Tc=25℃
Pulse Test
VGS =10V
RDS(ON) , Rrain-Source On-Resistance (Ω)
ID, Drain Current(V)
1
0.1
0.01
0.1
1
10
100

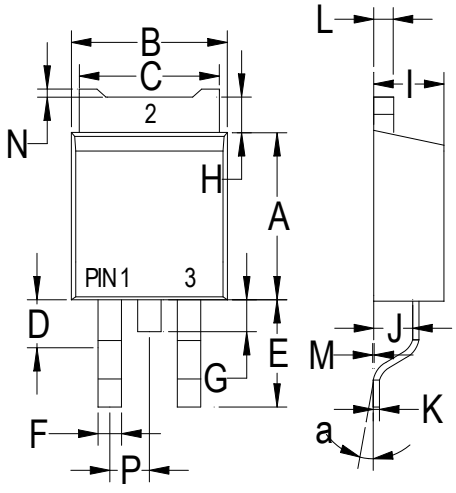

EAS, Avalanche Energy(mJ)
TCH , Channel Temperature(Initial) (℃)
200
160
120
80
40
0
25
50
75
100
125
150


Common Source
VDS=10V
ID=250uA
Pulse Test
VTH , Gate Threshold Voltage(V)
TC, Case Temperature(℃)
5
4
3
2
1
0
-80
-40
0
40
80
120
140


Duty Cycle = 0.5
0.2
0.1
0.05
0.02
Single Pulse
Nomalized Effective Transient Thermal Impedance
Pulse Time(s)
1
0.1
0.01
0.0001
0.001
0.01
0.1
1
10

PACKAGE OUTLINE DIMENSIONS

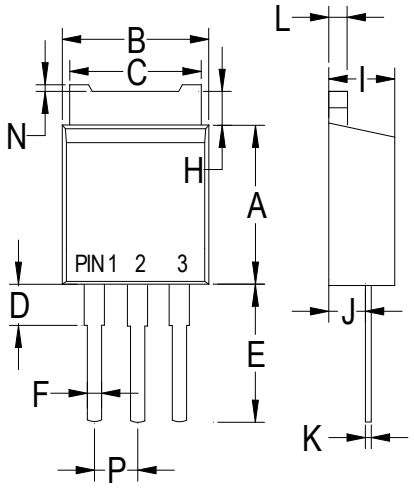
TO-252



TO-252		
Dim	Min	Max
A	.230(5.85)	.246(6.25)
B	.250(6.35)	.264(6.75)
C	.207(5.27)	.218(5.54)
D	.037(0.93)	.045(1.14)
E	.106(2.70)	.138(3.50)
F	.028(0.72)	.033(0.84)
G	.024(0.60)	.041(1.05)
H	.028(0.72)	.043(1.10)
I	.085(2.15)	.096(2.45)
J	.037(0.95)	.047(1.20)
K	.018(0.45)	.026(0.65)
L	.018(0.45)	.024(0.60)
P	.081(2.05)	.094(2.40)
M	.000(0.00)	.006(0.15)
N	--	.008(0.20)
a	0°	10°

Dimensions in inches and (millimeters)

TO-251



TO-251		
Dim	Min	Max
A	.230(5.85)	.246(6.25)
B	.250(6.35)	.266(6.75)
C	.207(5.27)	.218(5.54)
D	.037(0.93)	.045(1.14)
E	.173(4.40)	.205(5.20)
F	.028(0.72)	.033(0.84)
H	.028(0.70)	.043(1.10)
I	.085(2.15)	.096(2.45)
J	.037(0.95)	.047(1.20)
K	.018(0.45)	.026(0.65)
L	.018(0.45)	.024(0.60)
N	--	.008(0.20)
P	.081(2.05)	.094(2.40)

Dimensions in inches and (millimeters)

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