Features:

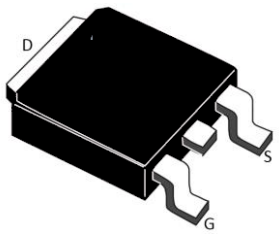
- Fast Switching
- Low ON Resistance(R_{dson}≤55Ω)
- Low Gate Charge
- Low Reverse transfer capacitances
- 100% Single Pulse avalanche energy Test

Applications:

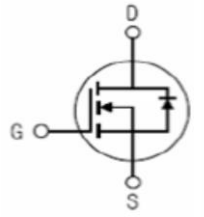
- Power switch circuit of adaptor and charger

V_{DSS}	1000	V
I_D	0.5	A
P_D(T_C=25℃)	25	W
$R_{DS(ON).TYPE}$	40	Ω

TO-252



Inner Equivalent Principium Chart



Absolute (Tc=25℃ unless otherwise specified):

Symbol	Parameter	Rating	Units
V_{DSS}	Drain-to-Source Voltage	1000	V
I_D	Continuous Drain Current	0.5	A
	Continuous Drain Current T_C=100 °C	0.17	A
I_{DM}[a1]	Pulsed Drain Current	1.5	A
V_{GS}	Gate-to-Source Voltage	±30	V
E_{As}[a2]	Single Pulse Avalanche Energy	12	mJ
E_{Ar}[a1]	Avalanche Energy ,Repetitive	4	mJ
I_{AR} [a1]	Avalanche Current	0.3	A
dv/dt[a3]	Peak Diode Recovery dv/dt	5.0	V/ns
P_D	Power Dissipation	25	W
T_J, T_{stg}	Operating Junction and Storage Temperature Range	150, −55 to 150	℃
T_L	Maximum Temperature for Soldering	300	℃

Caution Stresses greater than those in the "Absolute Maximum Ratings" may cause permanent damage to the device

Thermal Characteristics

Symbol	Parameter	Rating	Units
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case	5.0	℃/ W
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	100	℃/ W

Electrical Characteristics (Tc= 25℃ unless otherwise specified):

OFF Characteristics						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
V_{DSS}	Drain to Source Breakdown Voltage	V_{GS}=0V,I_D=250μA	1000	--	--	V
$\Delta BV_{DSS}/\Delta T_J$	Bvdss Temperature Coefficient	I_D=250uA,Reference25℃	--	0.51	--	V/℃
I_{DSS}	Drain to Source Leakage Current	V_{DS}=1000V, V_{GS}=0V,T_a=25℃	--	--	1	μA
		V_{DS}=800V, V_{GS}=0V,T_a=125℃	--	--	100	
$I_{GSS(F)}$	Gate to Source Forward Leakage	V_{GS}=+30V	--	--	100	nA
$I_{GSS(R)}$	Gate to Source Reverse Leakage	V_{GS}=-30V	--	--	-100	nA

ON Characteristics						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
$R_{DS(ON)}$	Drain-to-Source On-Resistance	V_{GS}=10V,I_D=0.25A	--	--	55	Ω
$V_{GS(TH)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=250μA	2.0	--	4.0	V
g_{fs}	Forward Trans conductance	V_{DS}=15V,I_D=0.25A	--	0.42	--	S
Pulse width<380μs; duty cycle<2%.						

Dynamic Characteristics						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
C_{iss}	Input Capacitance	V_{GS}=0V V_{DS}=25V f=1.0MHz	--	70	--	pF
C_{oss}	Output Capacitance		--	14.5	--	
C_{rss}	Reverse Transfer Capacitance		--	2.8	--	

Resistive Switching Characteristics						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
$t_{d(ON)}$	Turn-on Delay Time	I_D=0.5A,V_{DD}=500V V_{GS}=10V,R_g=4.7Ω	--	19	--	ns
t_r	Rise Time		--	11.5	--	
$t_{d(OFF)}$	Turn-Off Delay Time		--	48	--	
t_f	Fall Time		--	16.5	--	
Q_g	Total Gate Charge	I_D=0.5A,V_{DD}=500V V_{GS}=10V	--	10.0	--	nC
Q_{gs}	Gate to Source Charge		--	0.7	--	
Q_{gd}	Gate to Drain (“Miller”)Charge		--	7.2	--	

Source-Drain Diode Characteristics						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
I_{SD}	Continuous Source Current (Body Diode)		--	--	0.5	A
I_{SM}	Maximum Pulsed Current (Body Diode)		--	--	1.5	A
V_{SD}	Diode Forward Voltage	I_S=0.5A,V_{GS}=0V	--	--	1.5	V
t_{rr}	Reverse Recovery Time	I_S=0.5A,T_j=25℃	--	374	--	ns
Q_{rr}	Reverse Recovery Charge	dI_F/dt=100A/μs,V_{GS}=0V	--	735	--	μC

a1: Repetitive rating; pulse width limited by maximum junction temperature

a2: L=10mH, I_D=1.5A, Start T_J=25℃

a3: I_{SD}=0.5A,di/dt ≤100A/us,V_{DD}≤BV_{DS}, Start T_J=25℃

Characteristics Curve:

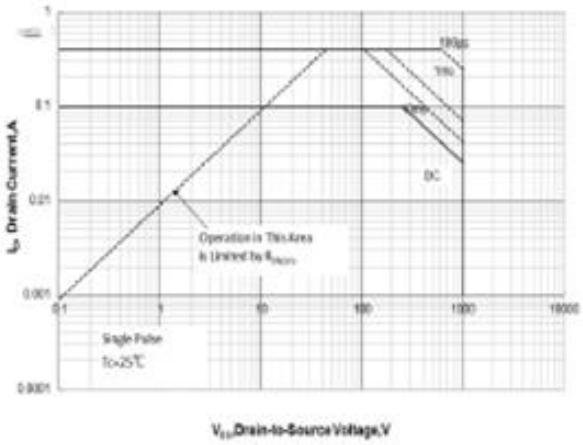


Figure 1 Maximum Forward Bias Safe Operating Area

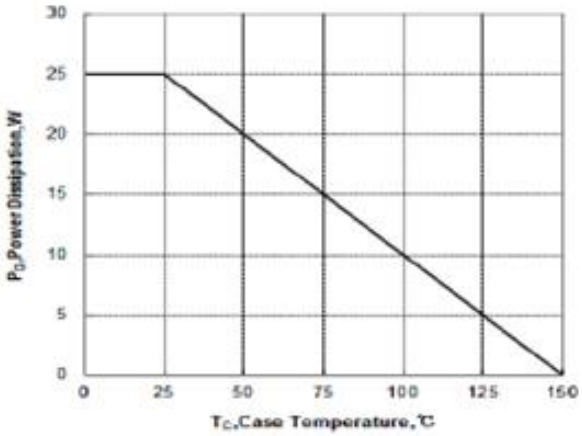


Figure 2 Maximum Power dissipation vs Case Temperature

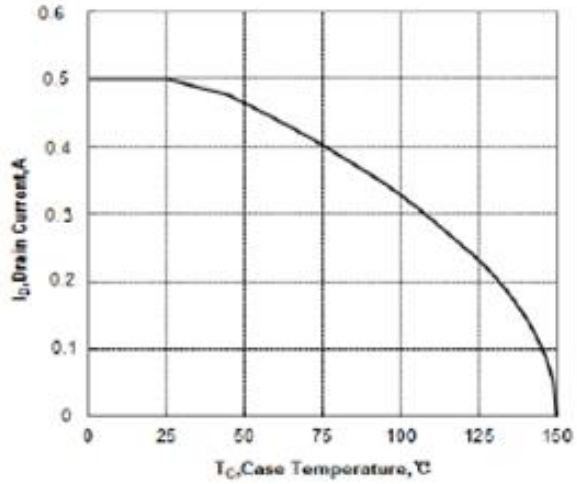


Figure 3 Maximum Continuous Drain Current vs Case Temperature

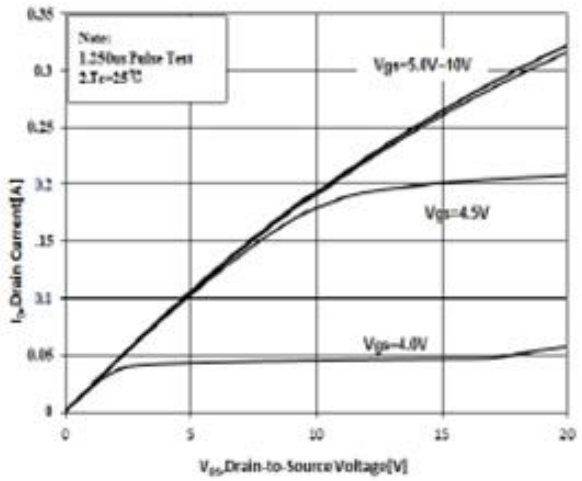


Figure 4 Typical Output Characteristics

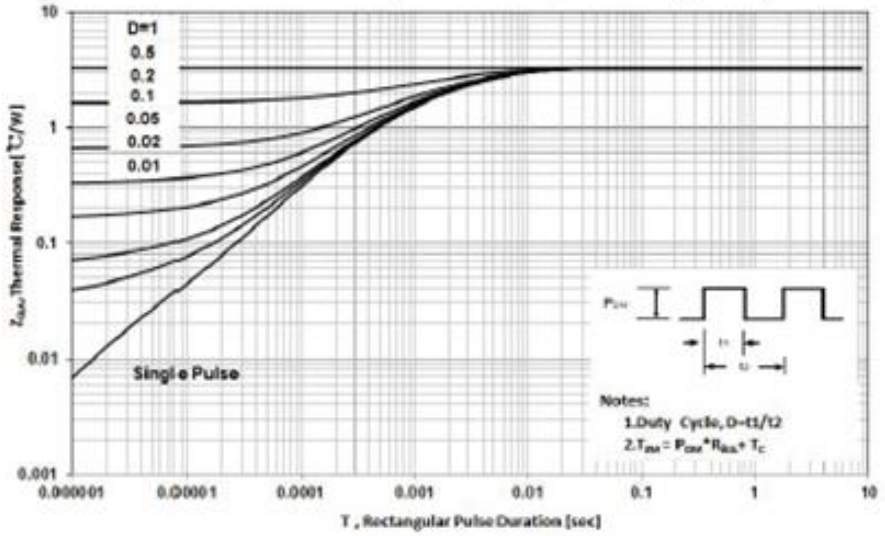


Figure 5 Maximum Effective Thermal Impedance , Junction to Case

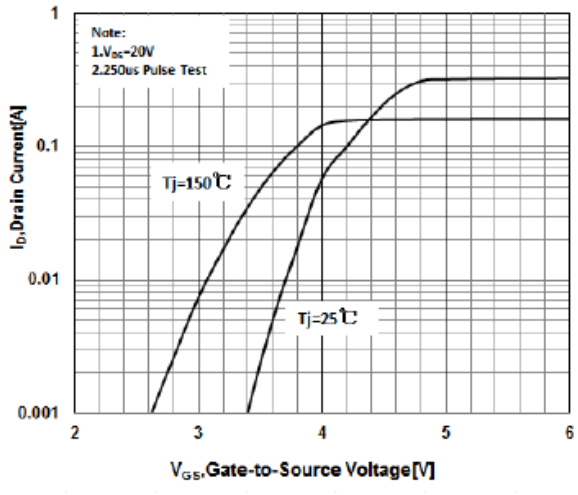


Figure 6 Typical Transfer Characteristics

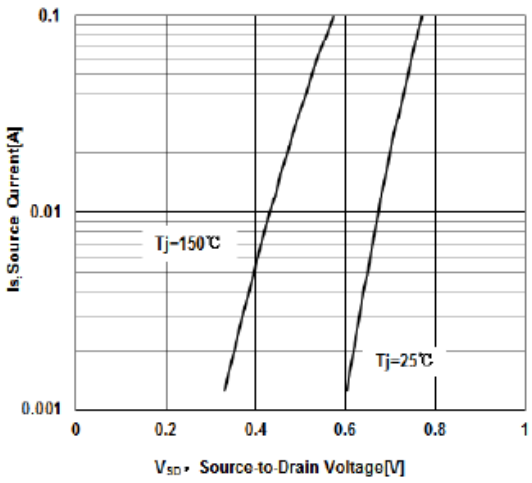


Figure 7 Typical Body Diode Transfer Characteristics

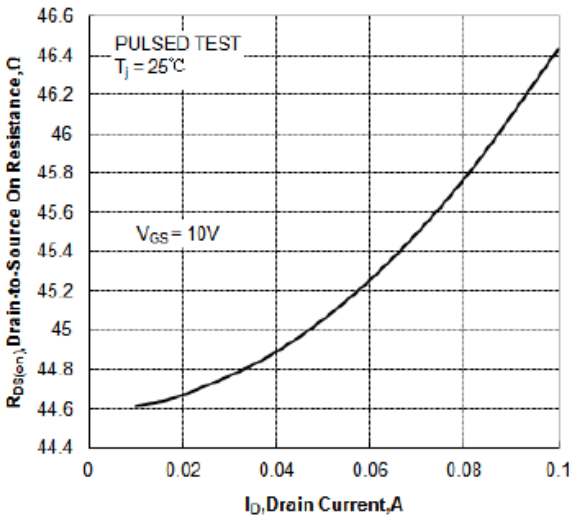


Figure 8 Typical Drain to Source ON Resistance vs Drain Current

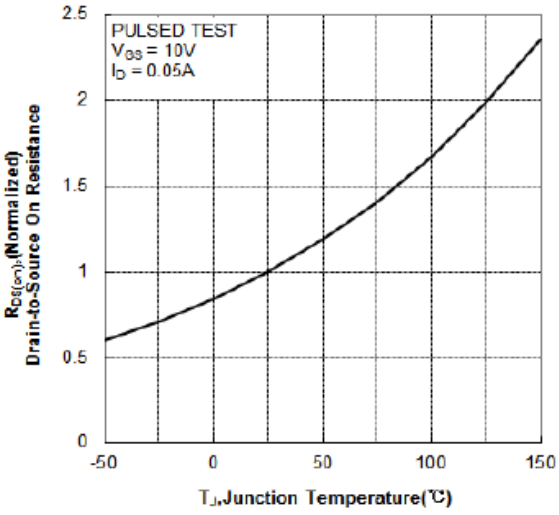


Figure 9 Typical Drian to Source on Resistance vs Junction Temperature