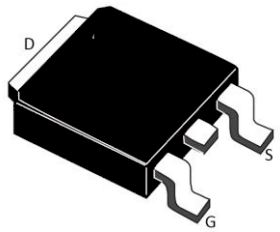
Features:

- $R_{DS(ON)}$ <0.9Ω @ V_{GS}=10V (Typ0.7Ω)
- High density cell design for ultra low R_{dson}
- Fully characterized avalanche voltage and current
- Excellent package for good heat dissipation

V_{DSS}	-200	V
I_D	-10	A
P_D	35	W
$R_{DS(ON)type}$	0.7	Ω

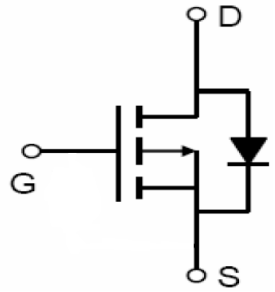
TO-252



Applications:

- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

Inner Equivalent Principium Chart



Absolute (Tc= 25℃ unless otherwise specified):

Symbol	Parameter	Rating	Units
V_{DSS}	Drain-to-Source Voltage	-200	V
I_D	Continuous Drain Current	-10	A
I_{DM}	Pulsed Drain Current	-40	A
V_{GS}	Gate-to-Source Voltage	±20	V
P_D	Power Dissipation	35	W
E_{AS}	Single pulse avalanche energy[a5]	260	mJ
T_J, T_{stg}	Operating Junction and Storage Temperature Range	150, −55 to 150	℃

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	-200	--	--	V
I_{DSS}	Drain to Source Leakage Current	V_{DS}=-200V,V_{GS}=0V,T_a=25℃	--	--	1.0	μA
$I_{GSS(F)}$	Gate to Source Forward Leakage	V_{GS}=+20V	--	--	0.1	μA
$I_{GSS(R)}$	Gate to Source Reverse Leakage	V_{GS}=-20V	--	--	-0.1	μA

ON Characteristics[a3]						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
$R_{DS(ON)}$	Drain-to-Source On-Resistance	V_{GS}=-10V,I_D=-5A	--	0.7	0.9	Ω
$V_{GS(TH)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=-250μA	-2	--	-4	V
Pulse width tp≤380μs,δ≤2%						

Dynamic Characteristics[a4]						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
g_{fs}	Forward Transconductance	V_{DS}=-15V,I_D=-5A	2	--	--	S
C_{iss}	Input Capacitance	V_{GS}=0V,V_{DS}=-25V f=1.0MHz	--	960	--	pF
C_{oss}	Output Capacitance		--	180	--	
C_{rss}	Reverse Transfer Capacitance		--	55	--	

Resistive Switching Characteristics[a4]						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
$t_{d(ON)}$	Turn-on Delay Time	V_{DD}=-160V,I_D=-5A V_{GS}=-10V,R_G=9.1Ω	--	22	--	ns
t_r	Rise Time		--	43	--	
$t_{d(OFF)}$	Turn-Off Delay Time		--	36	--	
t_f	Fall Time		--	27	--	
Q_g	Total Gate Charge	V_{DD}=-100V,I_D=-10A V_{GS}=-10V	--	36	--	nC
Q_{gs}	Gate to Source Charge		--	18	--	
Q_{gd}	Gate to Drain (“Miller”)Charge		--	15	--	

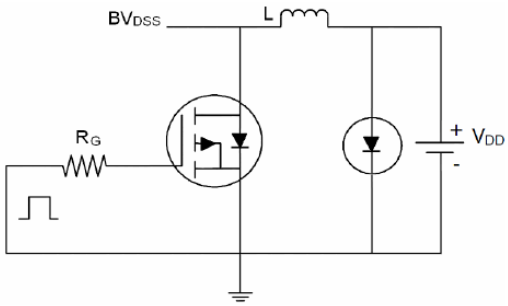
Source-Drain Diode Characteristics						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
I_S	Continuous Source Current [a2](Body Diode)		--	--	-5	A
V_{SD}	Diode Forward Voltage[a3]	I_S=-5A,V_{GS}=0V	--	--	-1.2	V

Symbol	Parameter	Typ.	Units
$R_{\theta JC}$	Junction-to-Case[a2]	3.57	℃/W

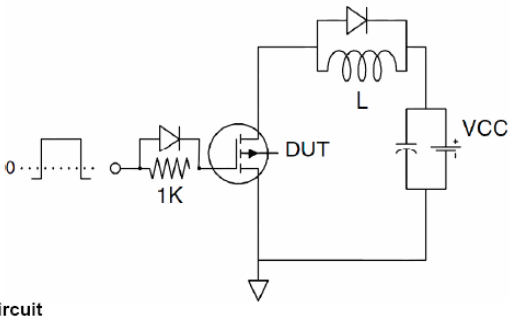
[a1]: Repetitive Rating: Pulse width limited by maximum junction temperature.
[a2]: Surface Mounted on FR4 Board, t≤10sec.
[a3]: Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%.
[a4]: Guaranteed by design, not subject to production
[a5]: EAS condition: Tj=25℃,V_{DD}=-50V,V_G=-10V,L=0.5mH,Rg=25Ω

Test circurt

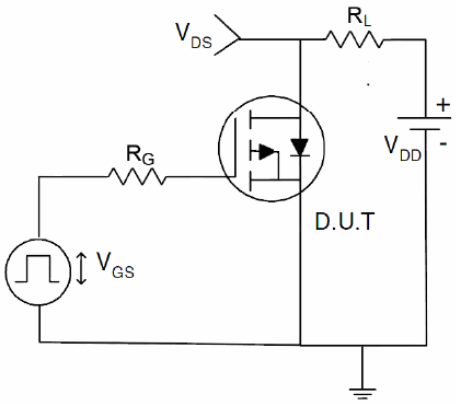
1) E_{AS} Test Circuit



2) Gate Charge Test Circuit



3) Switch Time Test Circuit



TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)

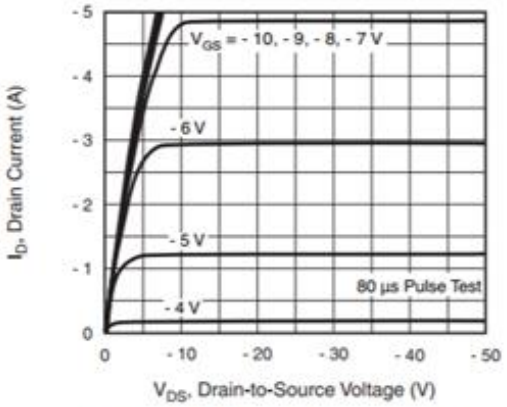


Fig. 1 - Typical Output Characteristics

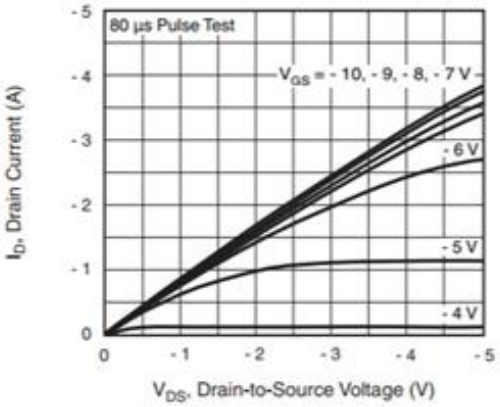


Fig. 3 - Typical Saturation Characteristics

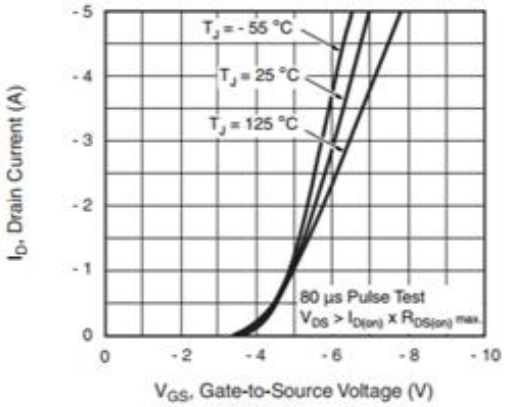


Fig. 2 - Typical Transfer Characteristics

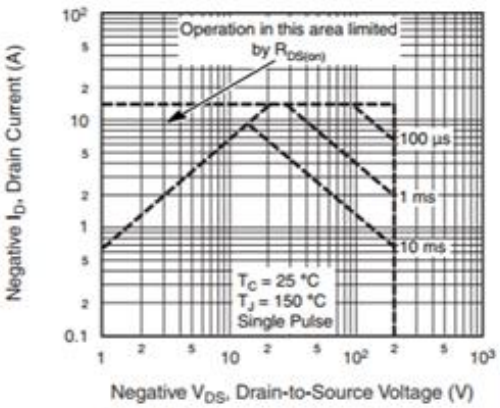


Fig. 4 - Maximum Safe Operating Area

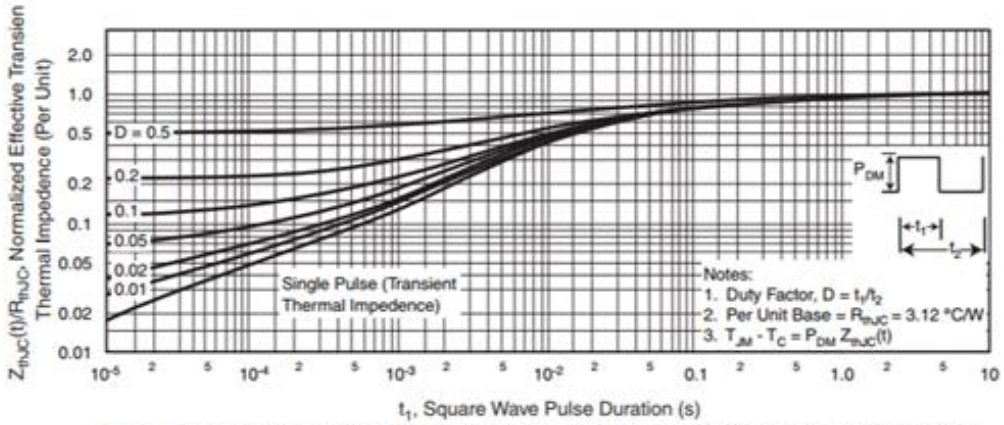


Fig. 5 - Maximum Effective Transient Thermal Impedance, Junction-to-Case vs. Pulse Duration

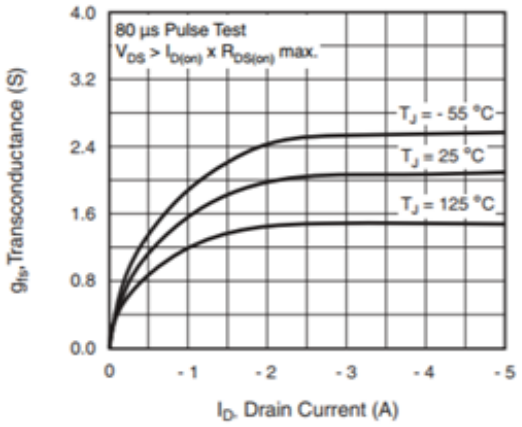


Fig. 6 - Typical Transconductance vs. Drain Current

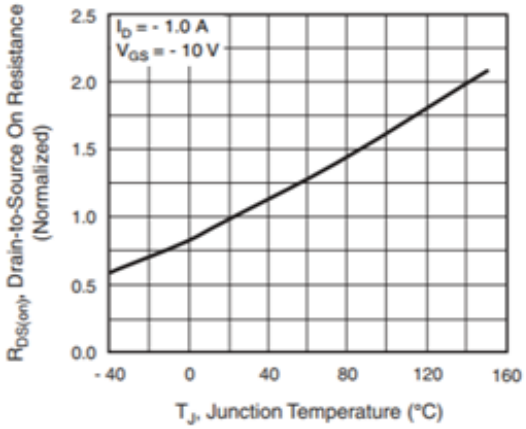


Fig. 9 - Normalized On-Resistance vs. Temperature

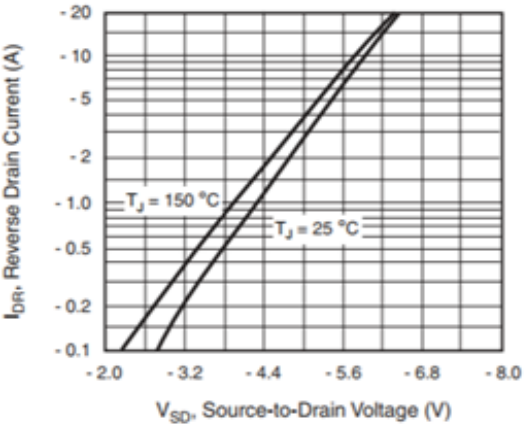


Fig. 7 - Typical Source-Drain Diode Forward Voltage

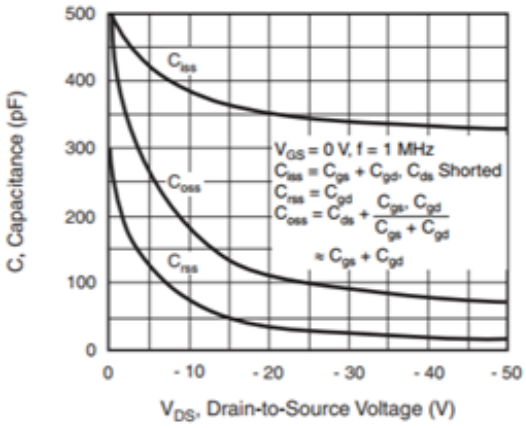


Fig. 10 - Typical Capacitance vs. Drain-to-Source Voltage

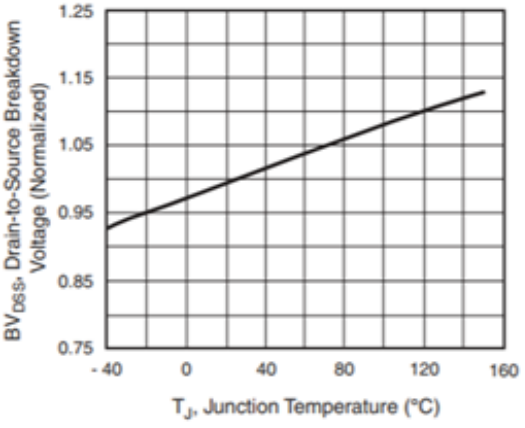


Fig. 8 - Breakdown Voltage vs. Temperature

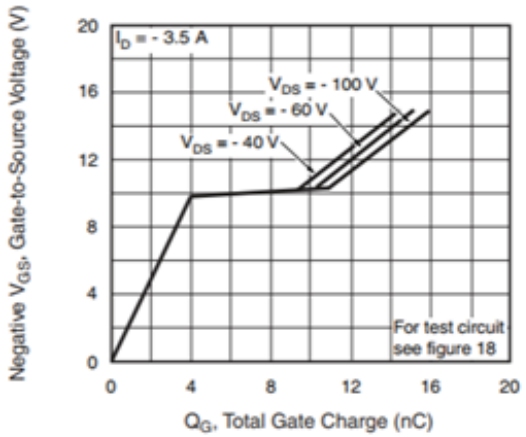


Fig. 11 - Typical Gate Charge vs. Gate-to-Source Voltage

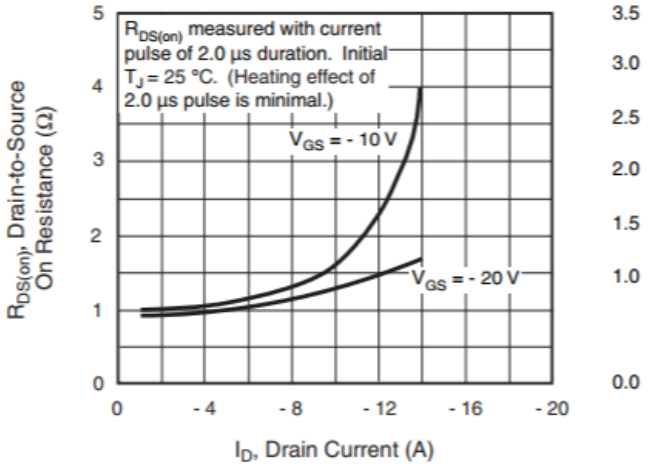


Fig. 12 - Typical On-Resistance vs. Drain Current

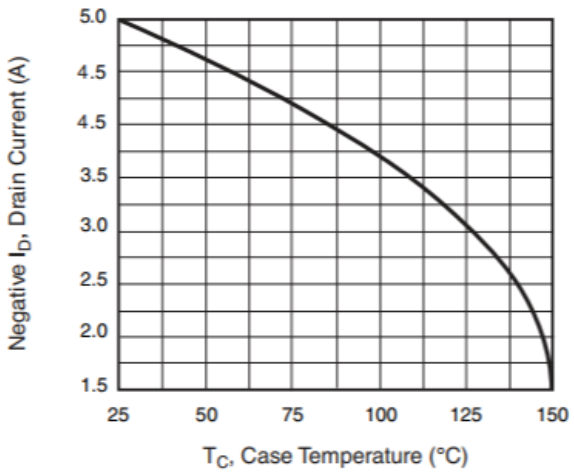


Fig. 13 - Maximum Drain Current vs. Case Temperature

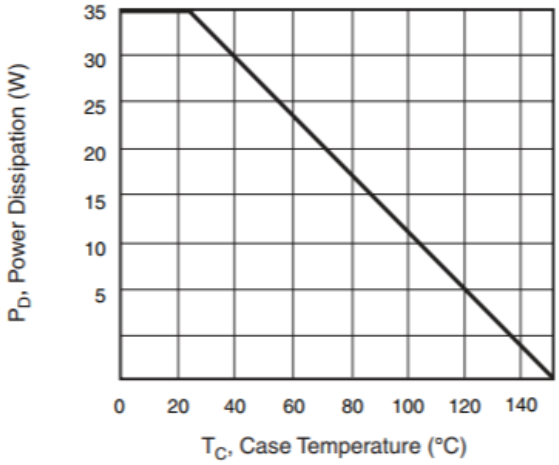


Fig. 14 - Power vs. Temperature Derating Curve