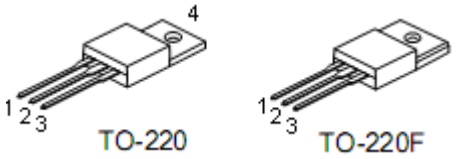
1. Features

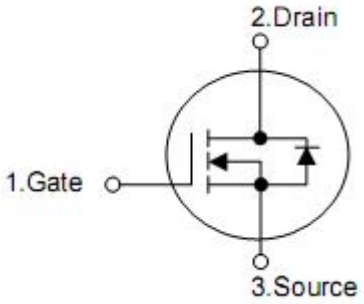
- $R_{DS(ON)}$=0.12Ω (Max.) @V_{GS}=10V
- RoHS compliant
- Low on resistance
- Low gate charge
- Peak current vs pulse width curve

2. Applications

- CRT, TV/Monitor
- Other applications

3.Symbol





Pin	Function
1	Gate
2	Drain
3	Source
4	Drain

4. Absolutemaximum ratings

(T_C=25°C,unless otherwise specified)

Parameter	Symbol	Rating	Units
Drain-source voltage (note*1)	V_{DSS}	200	V
Continuous drain current	I_D	18	A
Continuous drain current T_C=100 ºC		Figure 3	A
Pulsed drain current, V_{GS}@10V (note*2)	I_{DM}	Figure 6	A
Power dissipation	P_D	156	W
Derating factor above 25ºC		1.25	W/ºC
Gate-source voltage	V_{GS}	±30	V
Single pulse avalanche engergy L=10mH	E_{AS}	950	mJ
Pulsed avalanche rating	I_{AS}	Figure 8	
Peak diode recovery dv/dt (note*3)	dv/dt	5.0	V/ns
Operating junction and storage temperature range	T_J ,T_{STG}	-55 to150	ºC
Maximum temperature for soldering Leads at 0.063 in (1.6mm) from case for 10 seconds Package body for 10 seconds	T_L T_{PKG}	300 260	ºC

Caution：Stresses greater than those listed in the"Absolute maximum ratings"table may cause permanent Damage to the device

5. Thermal characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Test condition
Junction-case	$R_{\theta JC}$	-	-	0.8	ºC/W	Water cooled heatsink, P_D adjusted for a peak junction temperature of +150 ºC
Junction-ambient	$R_{\theta JA}$	-	-	62	ºC/W	1 cubic foot chamber,free air

6. Electrical characteristics

(T_J=25°C,unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Drain-source breakdown voltage	BV_{DSS}	V_{GS}=0V,I_D=250μA	200	-	-	V
Breakdown voltage temperature coefficient Figure 11	$\triangle BV_{DSS}/\triangle T_J$	Reference 25℃ I_D=250uA	-	0.25	-	V/ºC
Drain-source leakage current	I_{DSS}	V_{DS}=200V, V_{GS}=0V	-	-	25	μA
		V_{DS}=160V, V_{GS}=0V T_J=125°C	-	-	250	
Gate-source forward leakage	I_{GSS}	V_{GS}=30V	-	-	100	nA
Gate-source reverse leakage		V_{GS}=-30V	-	-	-100	
Drain-source on-resistance Figure 9 and 10	$R_{DS(on)}$	V_{GS}=10V,I_D=10.8A (note*4)	-	0.12	0.18	Ω
Gate threshold voltage, Figure 12	$V_{GS(TH)}$	V_{DS}= V_{GS}, I_D=250uA	2	-	4	V
Forward transconductance	gfs	V_{DS}=15V, I_D=18A (note*4)	-	18	-	S
Input capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0V f=1MHz Figure 14	-	1140	-	pF
Output capacitance	C_{oss}		-	180	-	
Reverse transfer capacitance	C_{rss}		-	25	-	
Turn-on delay time	$t_{d(on)}$	V_{DD}=100V, I_D=18A, R_G=2.4Ω,V_{GS}=10V	-	11	-	ns
Rise time	t_r		-	33	-	
Turn-off delay time	$t_{d(off)}$		-	25	-	
Fall time	t_f		-	7	-	
Total gate charge	Q_g	V_{DS}=100V, I_D=18A, V_{GS}=10V Figure 15	-	24	-	nC
Gate-source charge	Q_{gs}		-	7.5	-	
Gate-drain (“Miller”)charge	Q_{gd}		-	9.5	-	
Continuous source current（body biode）	I_S	Integral pn-diode in MOSFET	-	-	18	A
Maximum pulsed current（body biode）	I_{SM}		-	-	72	
Diode forward voltage	V_{SD}	I_S=18A, V_{GS}=0V	-	-	1.5	V
Reverse recovery time	t_{rr}	I_F=18A, V_{GS}=0V dI/dt=100A/μs	-	160	-	ns
Reverse recovery charge	Q_{rr}		-	880	-	nC

Note:*1. T_J=25°C to 150°C

*2.Repetitive rating; pulse width limited by maximum junction temperature.

*3. I_{SD}=18A di/dt ≤ 100A/μs, V_{DD} ≤ BV_{DSS}, T_J=150°C.

*4.Pulse width ≤ 380μs, duty cycle ≤ 2%.

7. Typical operating characteristics

Figure 1. Maximum Effective Thermal Impedance, Junction-to-Case

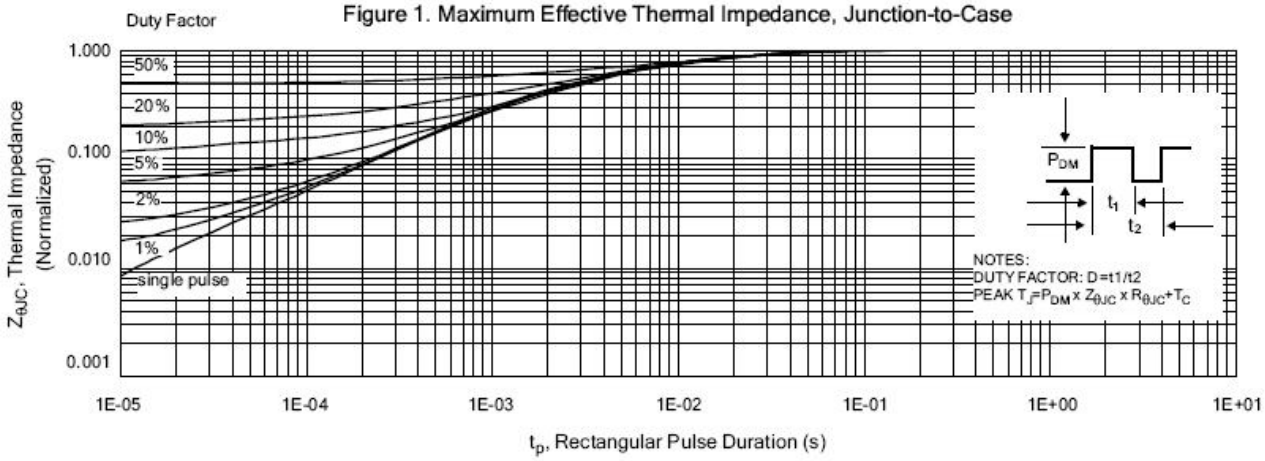


Figure 2. Maximum Power Dissipation vs Case Temperature

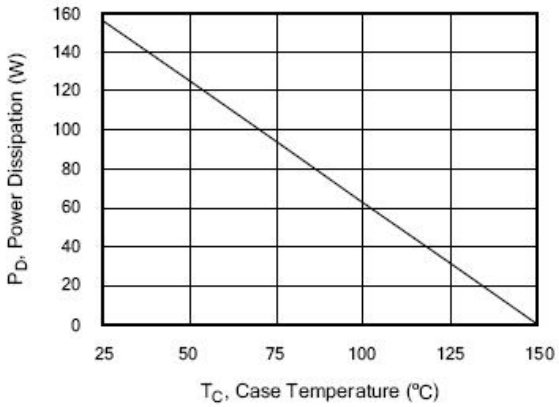


Figure3. Maximum Continuous Drain Current vs Case Temperature

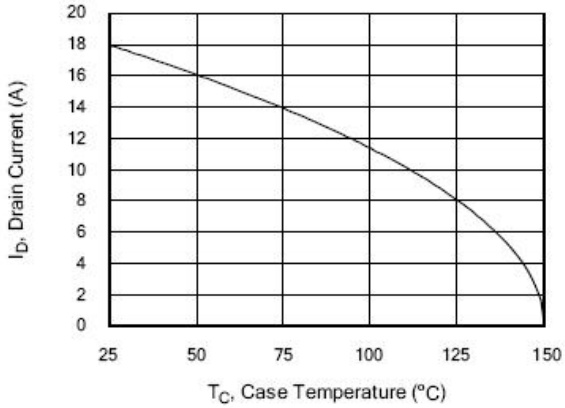


Figure 4. Typical Output Characteristics

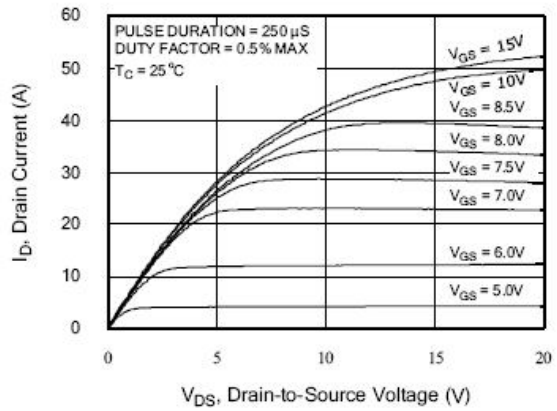


Figure5. Typical Drain-to-Source ON Resistance vs Gate Voltage and Drain Current

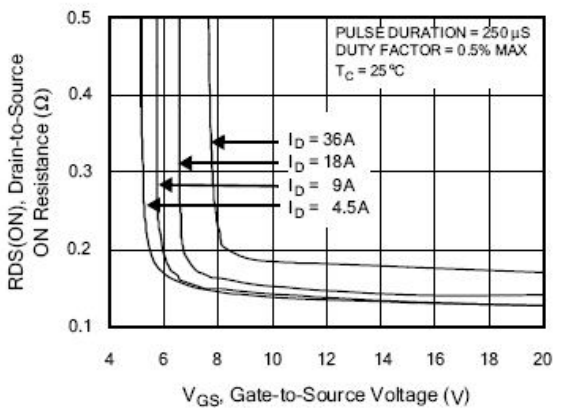


Figure 6. Maximum Peak Current Capability

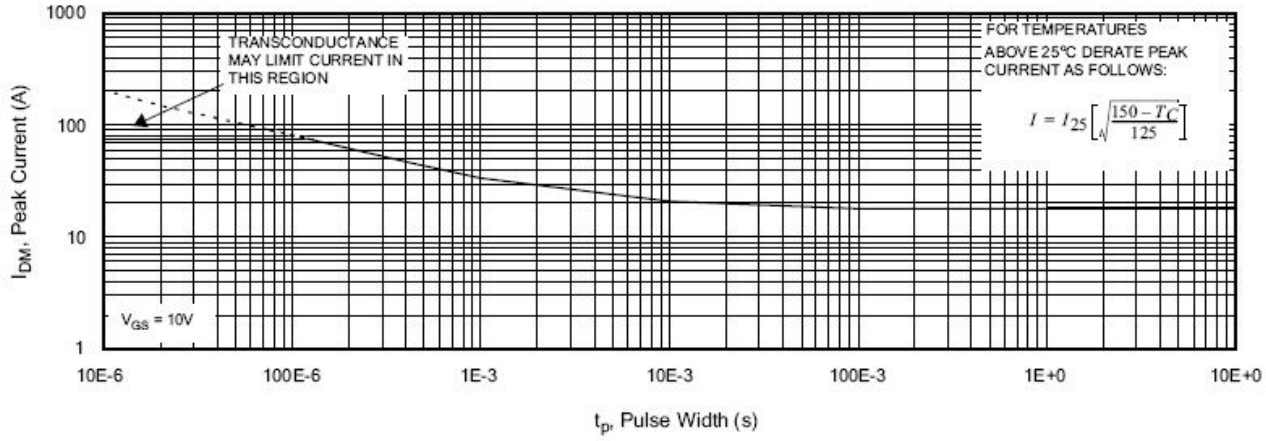


Figure 7. Typical Transfer Characteristics

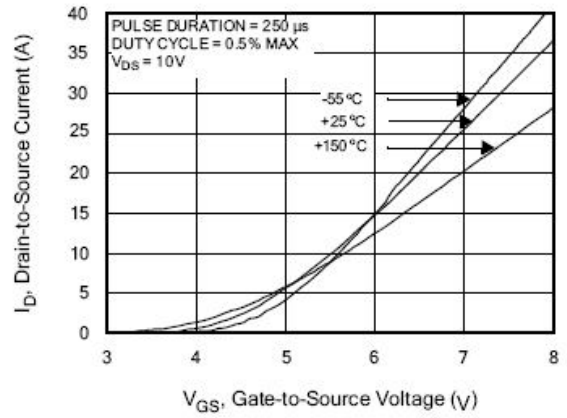


Figure8. Unclamped Inductive Switching Capability

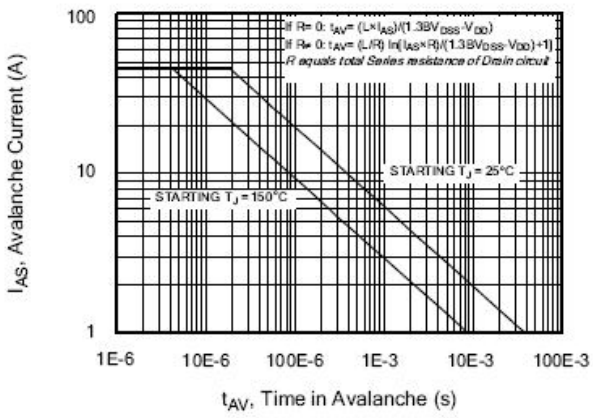


Figure 9. Typical Drain-to-Source ON Resistance vs Drain Current

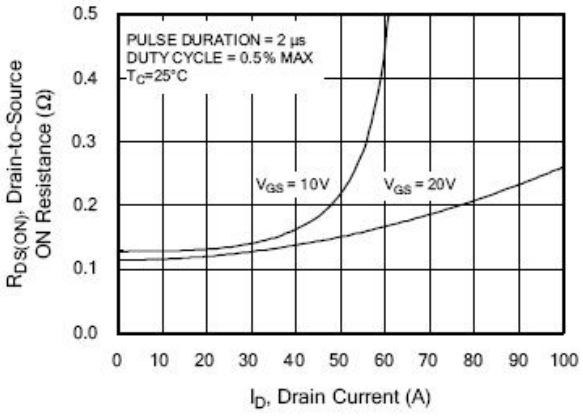


Figure 10. Typical Drain-to-Source ON Resistance vs Junction Temperature

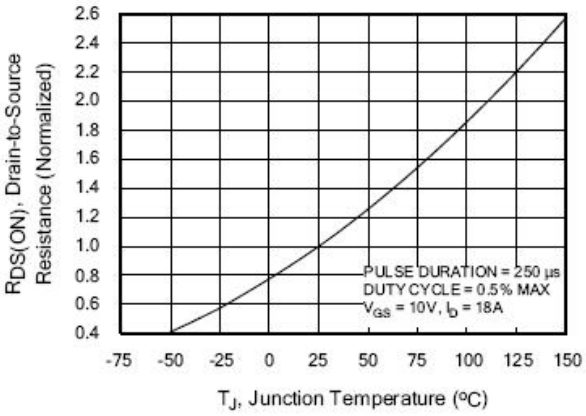


Figure 11. Typical Breakdown Voltage vs Junction Temperature

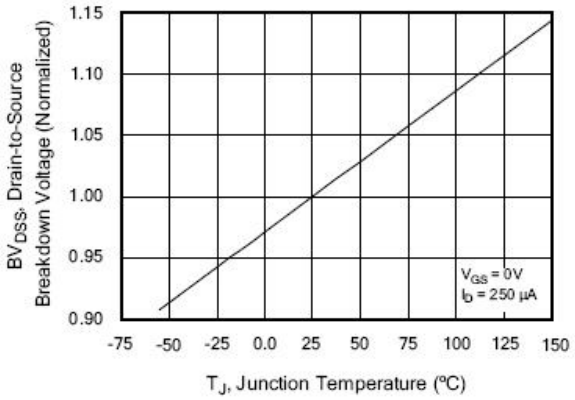


Figure 12. Typical Threshold Voltage vs Junction Temperature

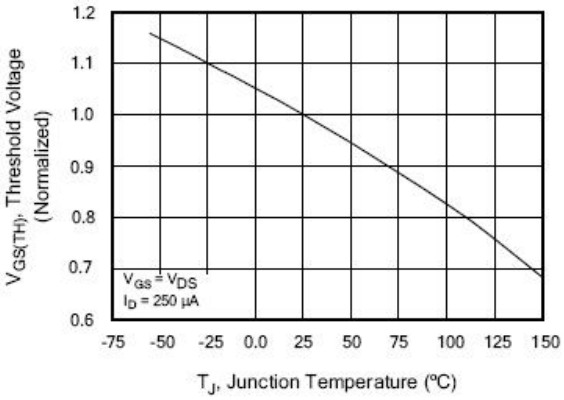


Figure 13. Maximum Forward Bias Safe Operating Area

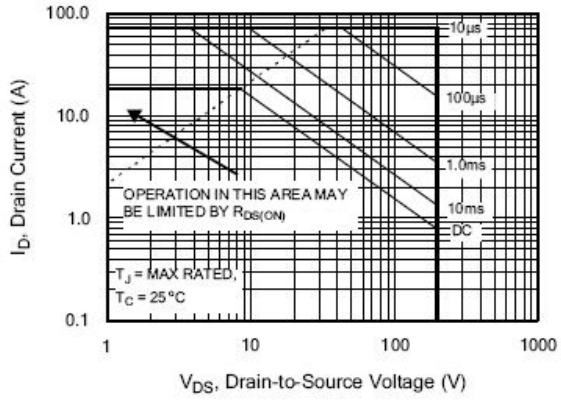


Figure 14. Typical Capacitance vs Drain-to-Source Voltage

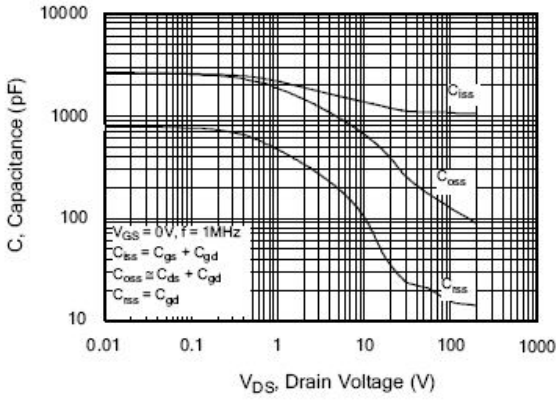


Figure 15. Typical Gate Charge vs Gate-to-Source Voltage

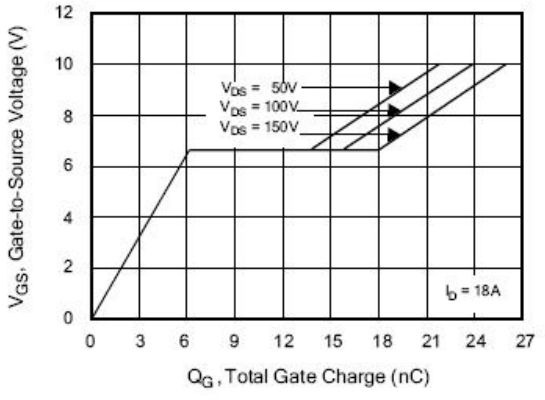


Figure 16. Typical Body Diode Transfer Characteristics