

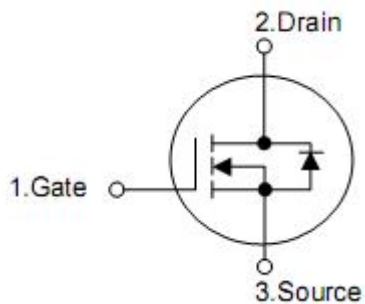
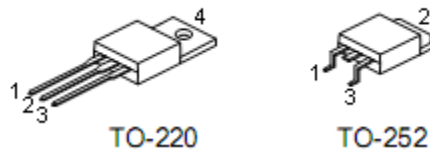
1. Features

- $R_{DS(ON)}=0.28\Omega$ (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. Absolute maximum ratings

($T_C=25^{\circ}\text{C}$, unless otherwise specified)

Parameter	Symbol	Rating	Units
Drain-source voltage (note*1)	V_{DSS}	200	V
Continuous drain current	I_D	9.0	A
Continuous drain current $T_C=100^{\circ}\text{C}$		Figure 3	A
Pulsed drain current, $V_{GS}@10\text{V}$ (note*2)	I_{DM}	Figure 6	A
Power dissipation	P_D	83	W
Derating factor above 25°C		0.67	$\text{W}/^{\circ}\text{C}$
Gate-source voltage	V_{GS}	± 30	V
Single pulse avalanche energy $L=10\text{mH}$	E_{AS}	460	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 to 150	$^{\circ}\text{C}$
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	$^{\circ}\text{C}$

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	$R_{\theta JC}$	-	-	1.5	$^{\circ}\text{C}/\text{W}$	Water cooled heatsink, P_D adjusted for a peak junction temperature of $+150^{\circ}\text{C}$
Junction-ambient	$R_{\theta JA}$	-	-	62	$^{\circ}\text{C}/\text{W}$	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	ΔBV _{DSS} /ΔT _J	Reference 25°C I _D =250uA	-	0.2	-	V/°C
Drain-source leakage current	I _{DSS}	V _{DS} =200V, V _{GS} =0V	-	-	1.0	μA
		V _{DS} =160V, V _{GS} =0V T _J =125°C	-	-	100	
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 =5.4A (note*4)	-	0.23	0.28	Ω
Gate threshold voltage, Figure 12	V _{GS(TH)}	V _{DS} = V _{GS} , I _D =250uA	2	-	4	V
Forward transconductance	g _{fs}	V _{DS} =25V, I _D =9A (note*4)	-	9.5	-	S
Input capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V f=1MHz Figure 14	-	600	-	pF
Output capacitance	C _{oss}		-	90	-	
Reverse transfer capacitance	C _{rss}		-	10	-	
Turn-on delay time	t _{d(on)}	V _{DD} =100V, I _D =9A, R _G =12Ω, V _{GS} =10V	-	10	-	ns
Rise time	t _r		-	21	-	
Turn-off delay time	t _{d(off)}		-	24	-	
Fall time	t _f		-	17	-	
Total gate charge	Q _g	V _{DD} =100V, I _D =9A, V _{GS} =10V Figure 15	-	13	-	nC
Gate-source charge	Q _{gs}		-	4.0	-	
Gate-drain ("Miller")charge	Q _{gd}		-	4.5	-	
Continuous source current (body diode)	I _S	Integral pn-diode in MOSFET	-	-	9.0	A
Maximum pulsed current (body diode)	I _{SM}		-	-	36	
Diode forward voltage	V _{SD}	I _S =9A, V _{GS} =0V	-	-	1.5	V
Reverse recovery time	t _{rr}	I _F =9A, V _{GS} =0V dI/dt=100A/μs	-	120	-	ns
Reverse recovery charge	Q _{rr}		-	495	-	nC

Note:*1. T_J=25°C to 150°C

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

*3. I_{SD}=9A di/dt ≤ 100A/μs, V_{DD} ≤ BV_{DSS}. T_J=150°C.

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

7. Typical operating characteristics

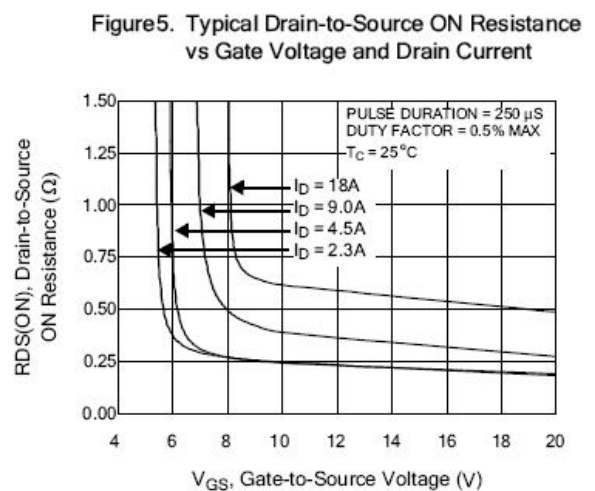
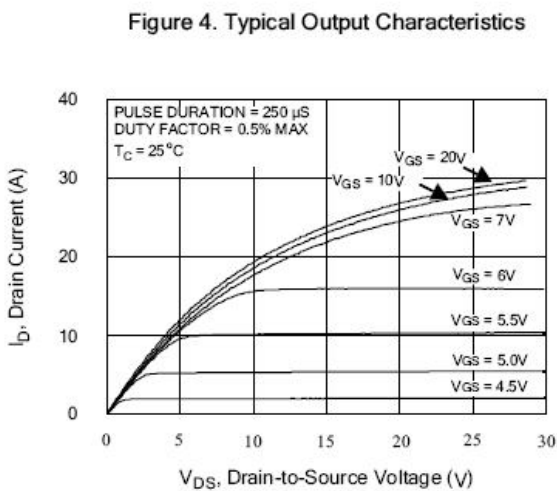
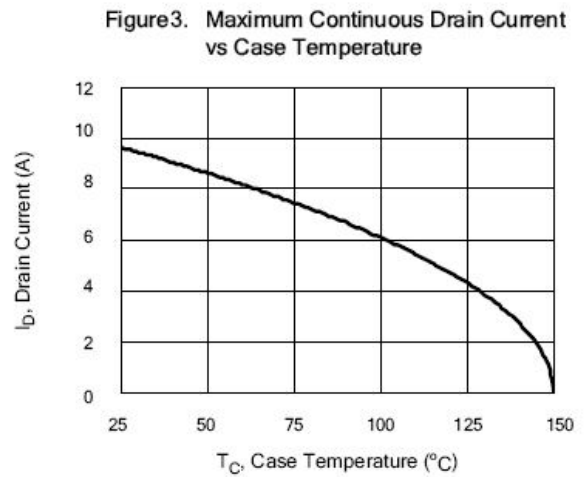
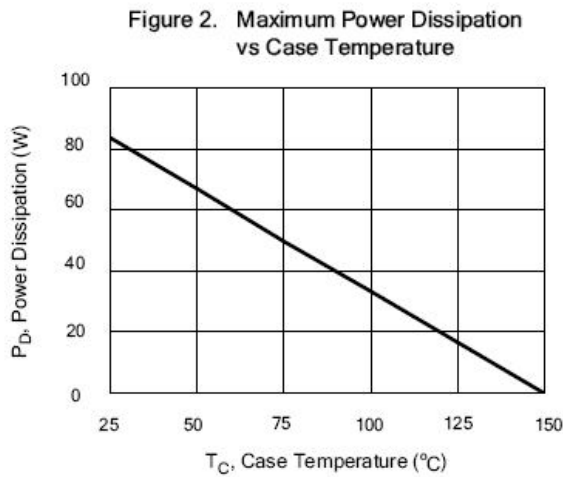
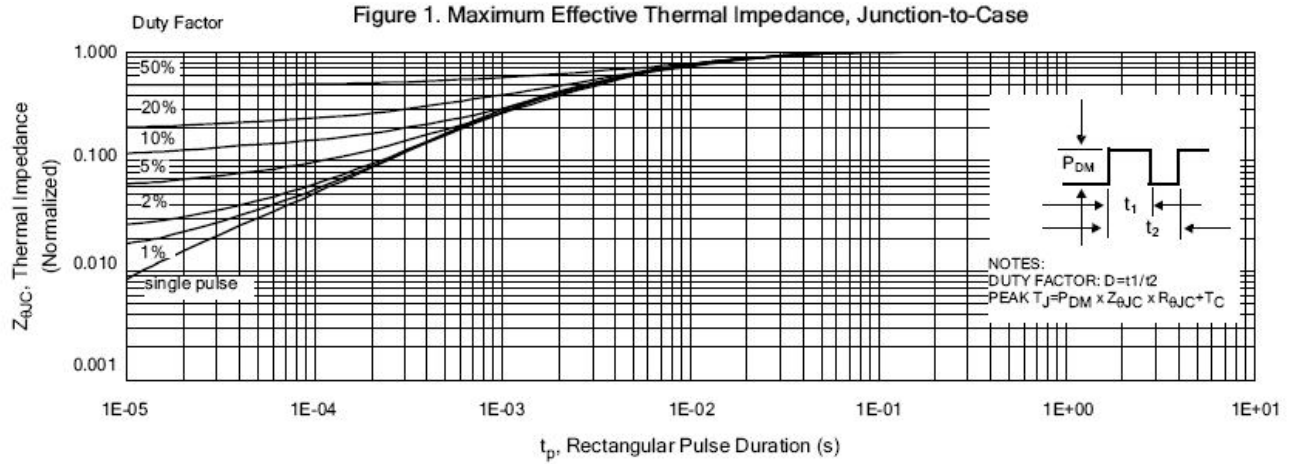


Figure 6. Maximum Peak Current Capability

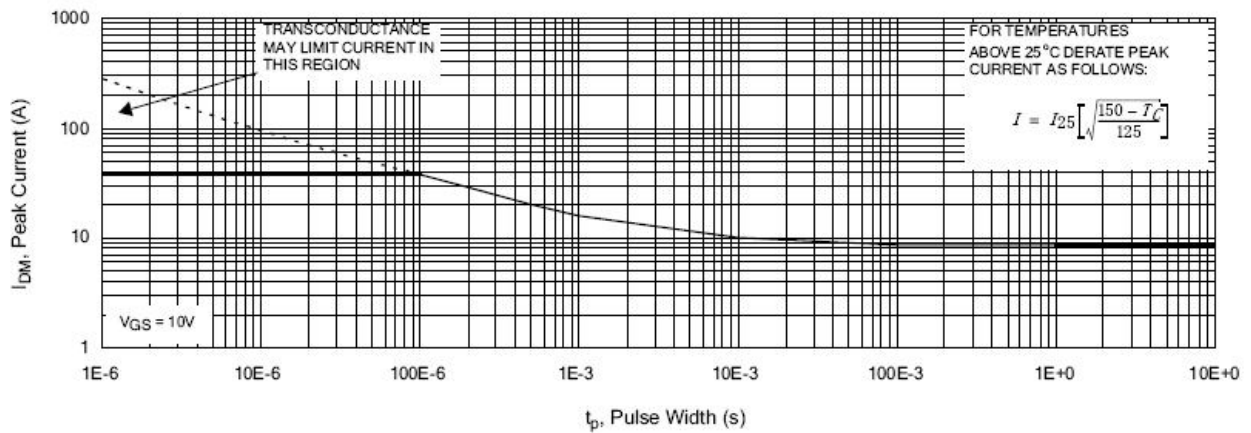


Figure 7. Typical Transfer Characteristics

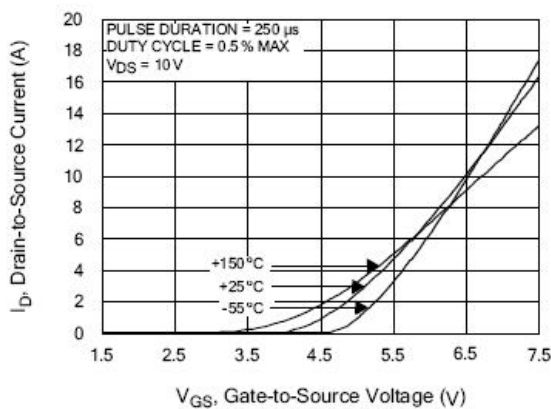


Figure 8. Unclamped Inductive Switching Capability

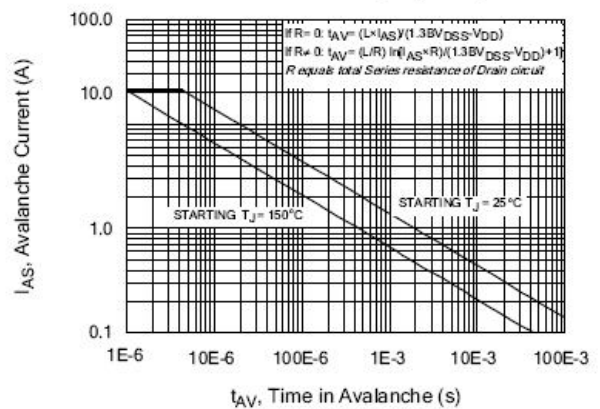


Figure 9. Typical Drain-to-Source ON Resistance vs Drain Current

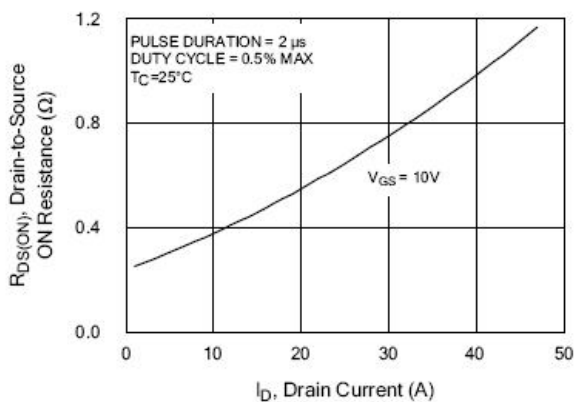


Figure 10. Typical Drain-to-Source ON Resistance vs Junction Temperature

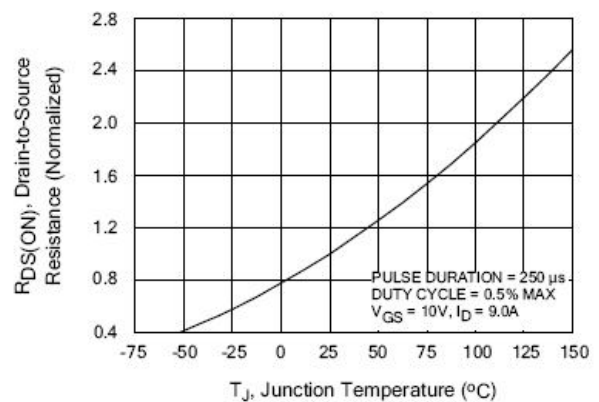


Figure 11. Typical Breakdown Voltage vs Junction Temperature

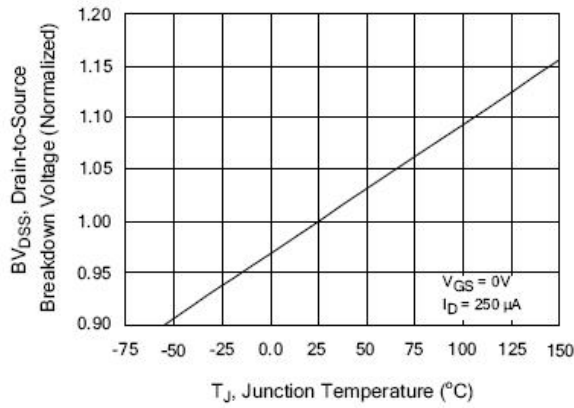


Figure 12. Typical Threshold Voltage vs Junction Temperature

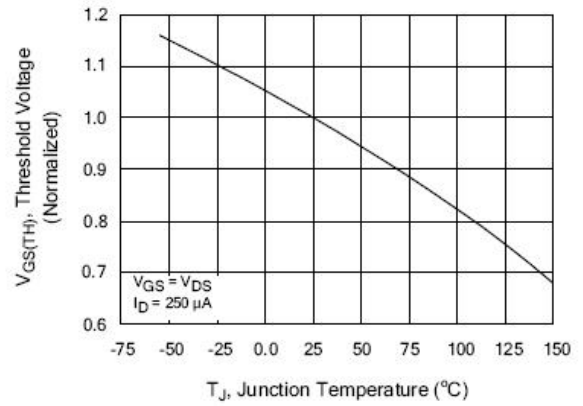


Figure 13. Maximum Forward Bias Safe Operating Area

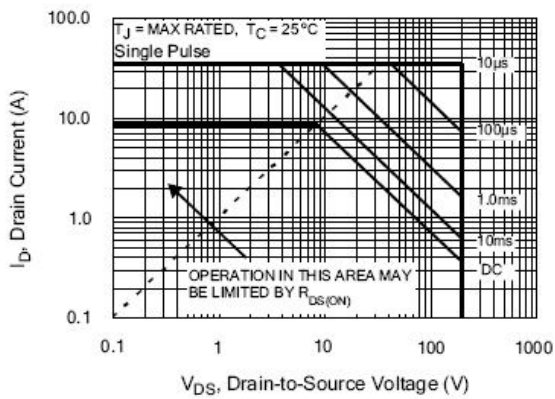


Figure 14. Typical Capacitance vs Drain-to-Source Voltage

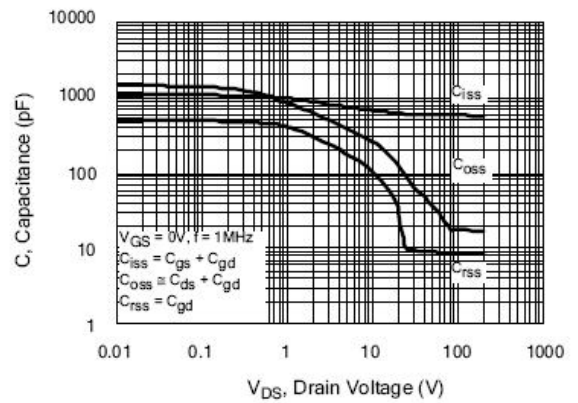


Figure 15. Typical Gate Charge vs Gate-to-Source Voltage

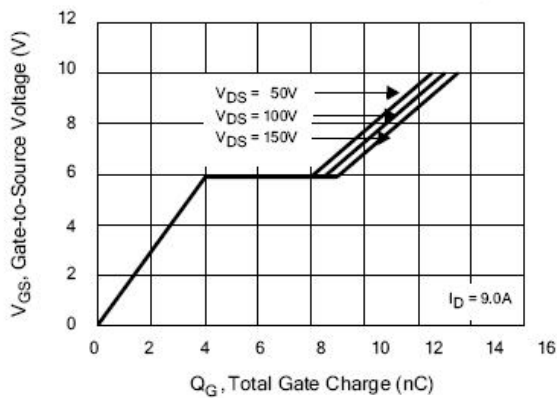


Figure 16. Typical Body Diode Transfer Characteristics

