

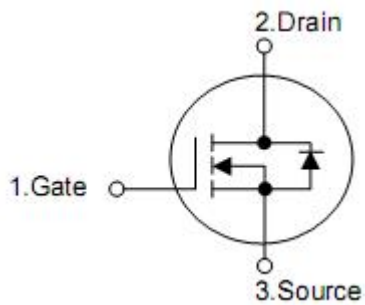
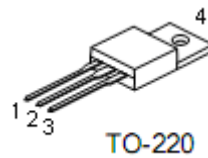
## 1. Features

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

## 2. Applications

- n CRT, TV/Monitor
- n 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	$V_{DSS}$	200	V
Continuous drain current	$I_D$	18	A
Pulsed drain current, $V_{GS}@10\text{V}$	$I_{DM}$	72	A
Power dissipation	$P_D$	156	W
Derating factor above $25^{\circ}\text{C}$		1.25	W/ $^{\circ}\text{C}$
Gate-source voltage	$V_{GS}$	$\pm 20$	V
Single pulse avalanche energy $L=10\text{mH}$	$E_{AS}$	1000	mJ
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	$T_L$	300	$^{\circ}\text{C}$

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	$R_{\theta JC}$	-	-	0.8	$^{\circ}\text{C}/\text{W}$	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

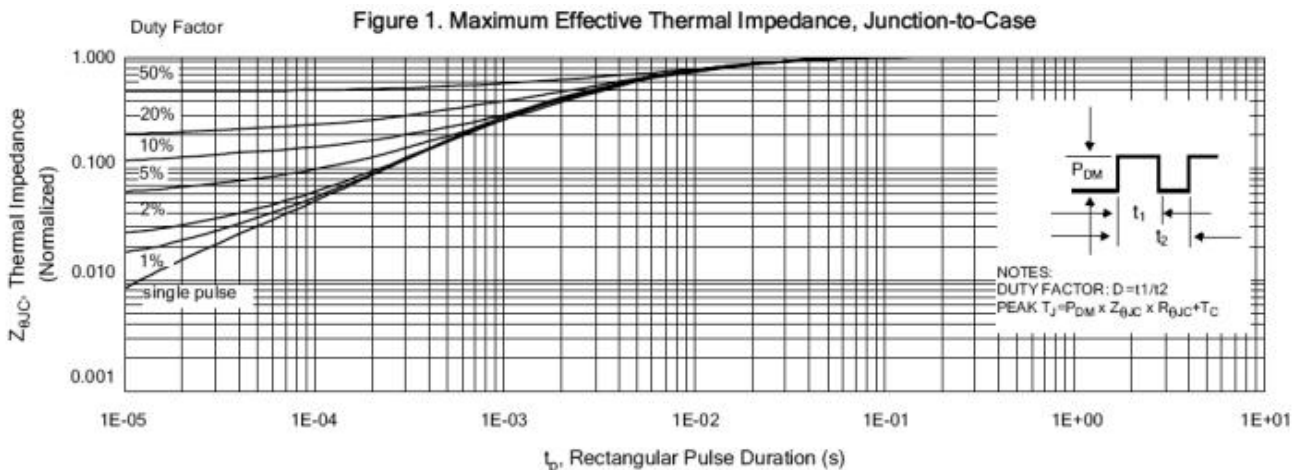
 (T<sub>J</sub>=25°C, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Drain-source breakdown voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	200	-	-	V
Drain-source leakage current	I <sub>DSS</sub>	V <sub>DS</sub> =200V, V <sub>GS</sub> =0V	-	-	1	μA
		V <sub>DS</sub> =160V, V <sub>GS</sub> =0V T <sub>J</sub> =125°C	-	-	100	
Gate-source forward leakage	I <sub>GSS</sub>	V <sub>GS</sub> =20V	-	-	100	nA
Gate-source reverse leakage		V <sub>GS</sub> =-20V	-	-	-100	
Drain-source on-resistance Figure 9 and 10	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =10A	-	0.12	0.18	Ω
Gate threshold voltage, Figure 12	V <sub>GS(TH)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =250uA	2	-	4	V
Forward transconductance	g <sub>fs</sub>	V <sub>DS</sub> =15V, I <sub>D</sub> =18A	-	18	-	S
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0V f=1MHz	-	1256	-	pF
Output capacitance	C <sub>oss</sub>		-	158	-	
Reverse transfer capacitance	C <sub>rss</sub>		-	76	-	
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DD</sub> =100V, I <sub>D</sub> =18A, R <sub>G</sub> =2.4Ω, V <sub>GS</sub> =10V	-	11	-	ns
Rise time	t <sub>r</sub>		-	33	-	
Turn-off delay time	t <sub>d(off)</sub>		-	25	-	
Fall time	t <sub>f</sub>		-	7	-	
Total gate charge	Q <sub>g</sub>	V <sub>DS</sub> =100V, I <sub>D</sub> =18A, V <sub>GS</sub> =0 to 10V	-	34	-	nC
Gate-source charge	Q <sub>gs</sub>		-	5	-	
Gate-drain ("Miller") charge	Q <sub>gd</sub>		-	12	-	
Continuous source current <sup>2</sup>	I <sub>SD</sub>	Integral pn-diode in MOSFET	-	-	18	A
Maximum pulsed current <sup>2</sup>	I <sub>SM</sub>		-	-	72	
Diode forward voltage	V <sub>SD</sub>	I <sub>S</sub> =18A, V <sub>GS</sub> =0V	-	-	1.5	V
Reverse recovery time	t <sub>rr</sub>	I <sub>F</sub> =18A, V <sub>GS</sub> =0V dI/dt=100A/μs	-	280	-	ns
Reverse recovery charge	Q <sub>rr</sub>		-	700	-	nC

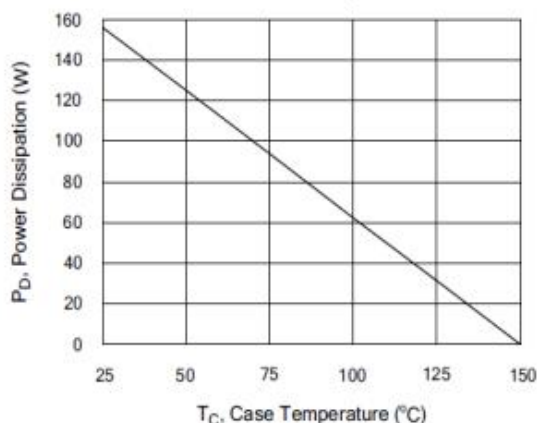
 Note:1. T<sub>J</sub>=±25°C to 150°C

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

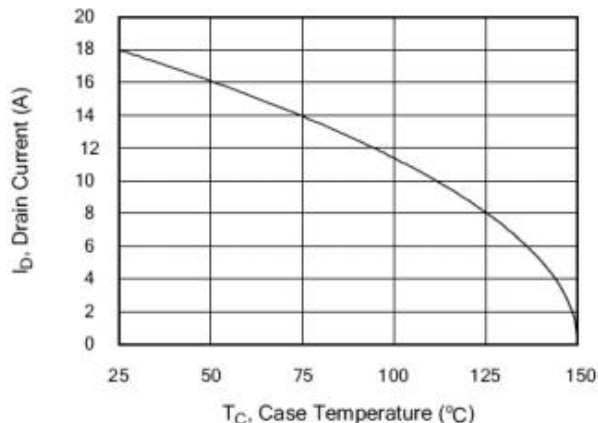
7. Typical characteristics



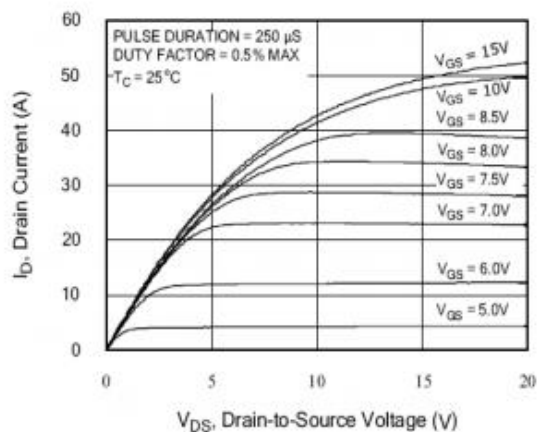
**Figure 2. Maximum Power Dissipation vs Case Temperature**



**Figure 3. Maximum Continuous Drain Current vs Case Temperature**



**Figure 4. Typical Output Characteristics**



**Figure 5. Typical Drain-to-Source ON Resistance vs Gate Voltage and Drain Current**

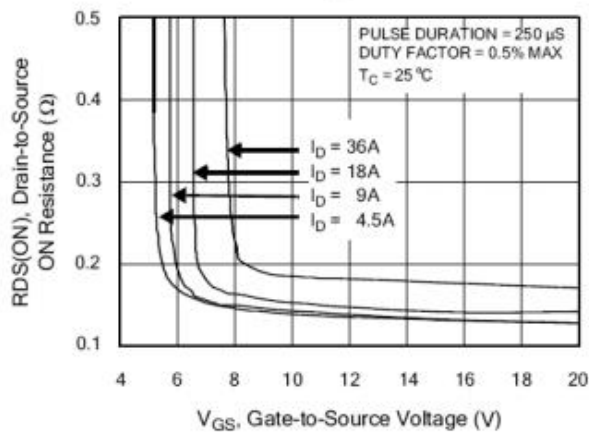


Figure 6. Maximum Peak Current Capability

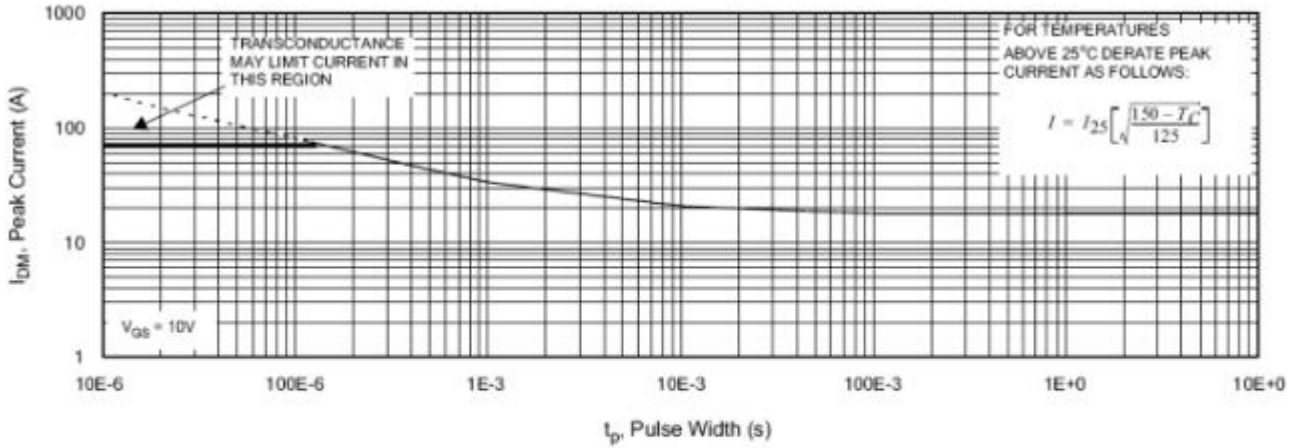


Figure 7. Typical Transfer Characteristics

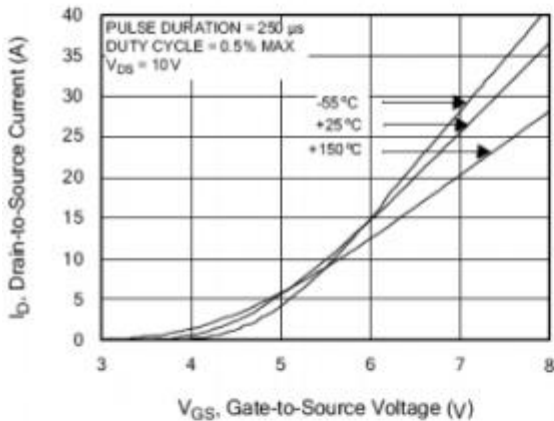


Figure 8. Unclamped Inductive Switching Capability

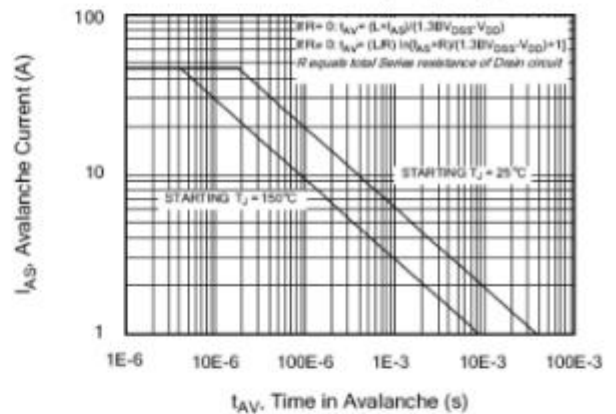


Figure 9. Typical Drain-to-Source ON Resistance vs Drain Current

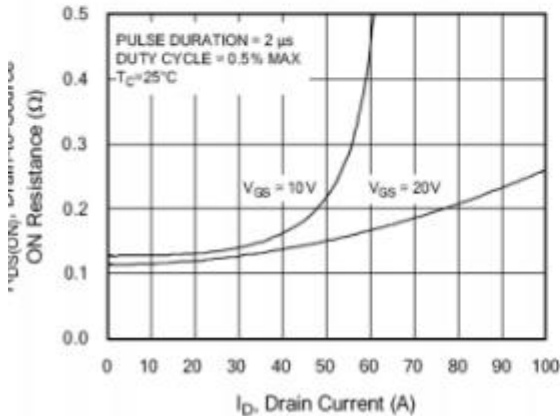
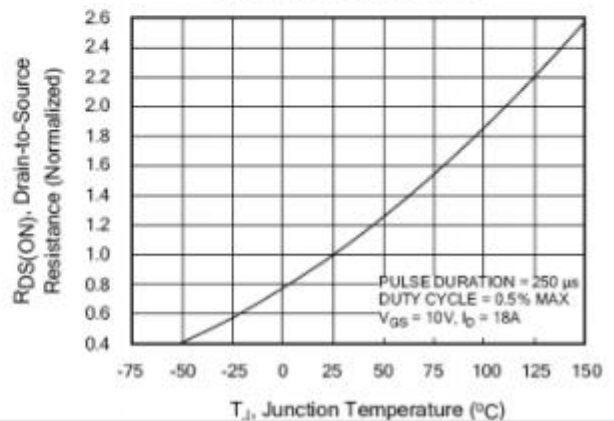
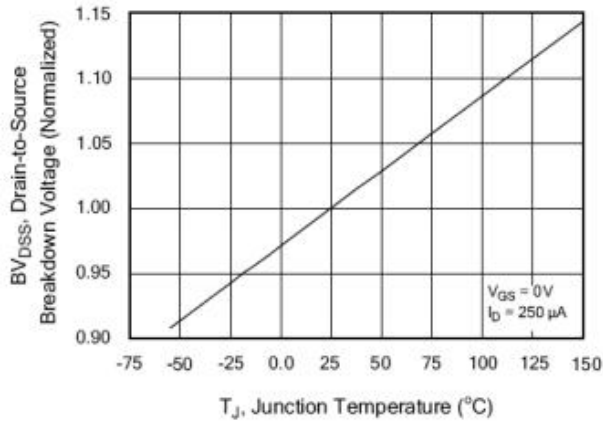


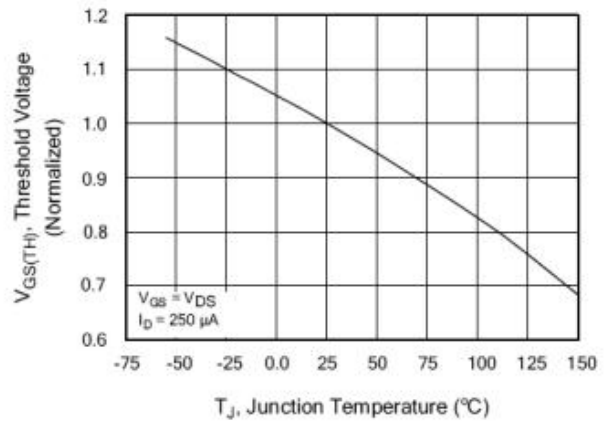
Figure 10. Typical Drain-to-Source ON Resistance vs Junction Temperature



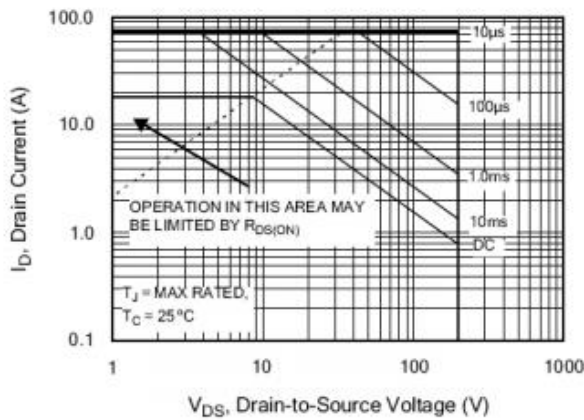
**Figure 11. Typical Breakdown Voltage vs Junction Temperature**



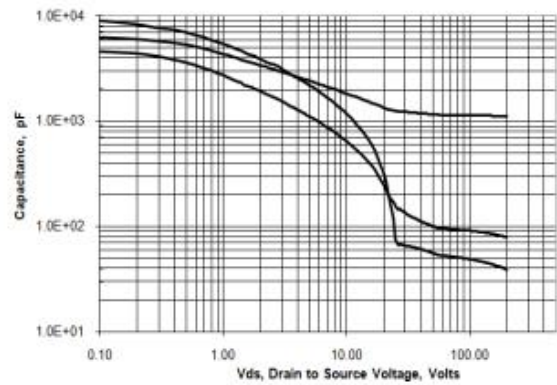
**Figure 12. Typical Threshold Voltage vs Junction Temperature**



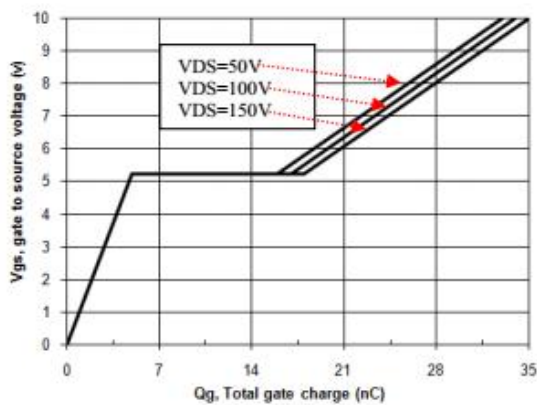
**Figure 13. Maximum Forward Bias Safe Operating Area**



**Figure 14. Capacitance vs Vds**



**Figure 15. Typical Gate Charge**



**Figure 16. Typical Body Diode Transfer Characteristics**

