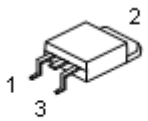
1. Applications

- CRT, TV/Monitor
- Other Applications

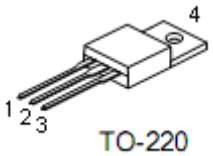
2. Features

- $R_{DS(on)}$= 260mΩ @V_{GS}= 10 V
- Proprietary new planar technology
- Low gate charge minimize switching loss
- Fast recovery body diode

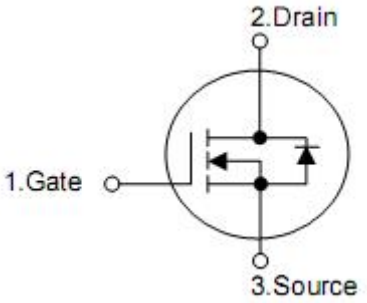
3. Pin configuration



TO-252



TO-220



Pin	Function
1	Gate
2	Drain
3	Source
4	Drain

4. Absolute maximum ratings

(T_C=25 ºC , unless otherwise specified)

Parameter		Symbol	Ratings	Units
Drain-source voltage		V_{DSS}	200	V
Gate-source voltage		V_{GSS}	±20	V
Continuous drain currenet		I_D	9.0	A
Pulsed drain current at V_{GS}=10V		I_{DM}	36	A
Single pulse Avalanche energy		E_{AS}	300	mJ
Power dissipation		P_D	83	W
	Derating factor above 25°C		0.59	W/°C
Soldering temperature distance of 1.6mm from case for 10seconds		T_L	300	°C
Operating and storage temperature range		T_J &T_{STG}	-55~+150	°C

Caution: Stresses greater than those listed in the “ Absolute maximum ratings” may cause permanent damage to the device.

5. Thermal characteristics

Parameter	Symbol	Rating		Unit
		TO-220	TO-252	
Thermal resistance,Junction-to-case	θ_{JC}	1.5	1.5	ºC/W
Thermal resistance,Junction-to-ambient	θ_{JA}	62	75	ºC/W

6. Electrical characteristics

(T_J=25°C,unless otherwise notes)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Off Characteristics						
Drain-source breakdown voltage	BV_{DSS}	V_{GS}=0V,I_D=250μA	200	-	-	V
Drain-to-source leakage current	I_{DSS}	V_{DS}=200V ,V_{GS}=0V	-	-	1	μA
		V_{DS}=160V ,V_{GS}=0V,T_J=125 ºC	-	-	100	μA
Gate-to-source leakage current	I_{GSS}	V_{GS}=20V,V_{DS}=0V	-	-	100	nA
		V_{GS}=-20V,V_{DS}=0V	-	-	-100	nA
On characteristics						
Gate threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2.0	-	4.0	V
Static drain-source on-resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=5.4A	-	260	400	mΩ
Forward transconductance	gfs	V_{DS}=25V, I_D=9A	-	9.5	-	S
Dynamic characteristics						
Input capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0V,f=1.0MHz	-	670	-	pF
Output capacitance	C_{oss}		-	78	-	
Reverse transfer capacitance	C_{rss}		-	30	-	
Total gate charge	Q_g	V_{DD}=150V,I_D=9A,V_{GS}=0V-10V,	-	16	-	nC
Gate-source charge	Q_{gs}		-	3	-	
Gate-drain (Miller)charge	Q_{gd}		-	6	-	
Resistive switching characteristics						
Turn-on delay time	$T_{d(ON)}$	V_{DD}=100V,I_D=9A,V_{GS}=10V, R_G=12Ω	-	6.8	-	nS
Rise time	t_{rise}		-	5.8	-	
Turn-off delay time	$T_{d(OFF)}$		-	20	-	
Fall time	t_{fall}		-	5	-	
Source-drain body diode characteristics	T_J=25°C,unless otherwise notes					
Diode forward voltage	V_{SD}	V_{GS}=0V,I_S=9A	-	-	1.5	V
Continuous source current[2]	I_{SD}	Integral PN-diode in MOSFET	-	-	9	A
Pulsed source current[2]	I_{SM}		-	-	36	A
Reverse recovery time	t_{rr}	I_F=9A,di_F/dt=100A/μs	-	155	-	ns
Reverse recovery charge	Q_{rr}		-	380	-	nC

Note: 1.T_J=25°C to 150°C

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

3.KIA finished product specifications please customer before placing order, should obtain the latest version of the finished product specifications.

7.Typical characteristics

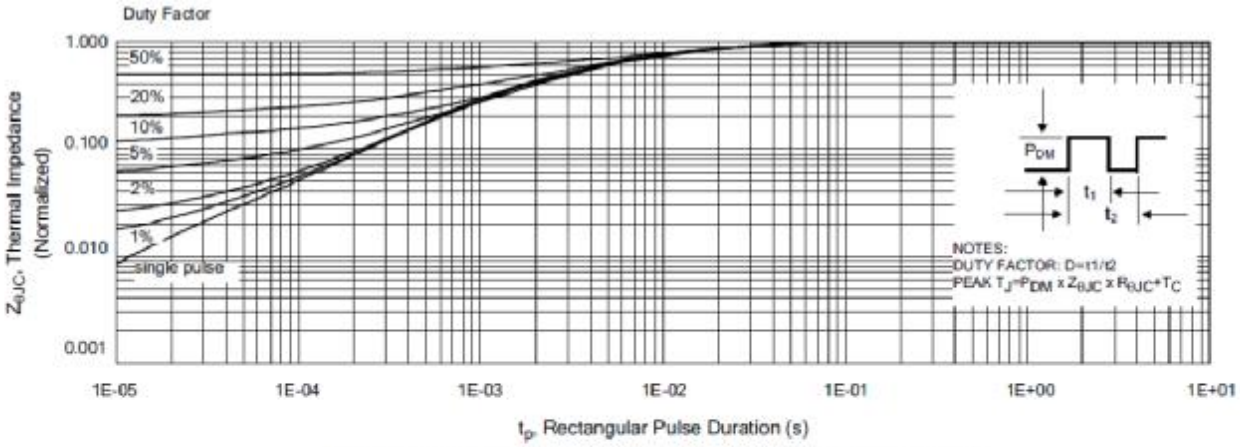


Figure 1. Maximum Effective Thermal Impedance, Junction-to-Case

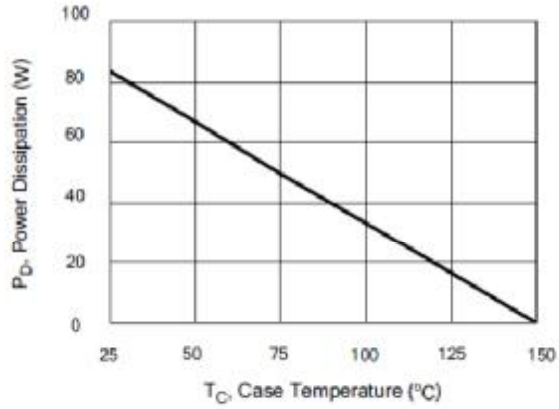


Figure 2. Maximum Power Dissipation vs Case Temperature

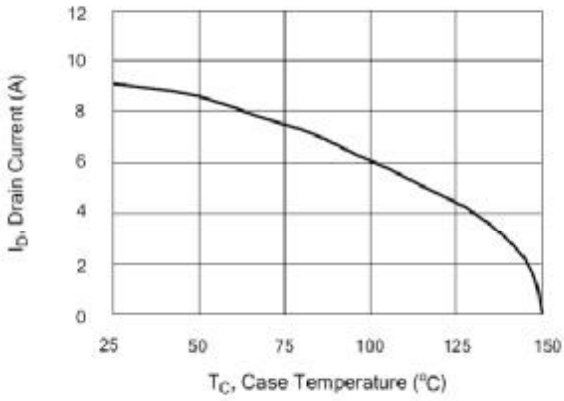


Figure3. Maximum Continuous Drain Current vs Case Temperature

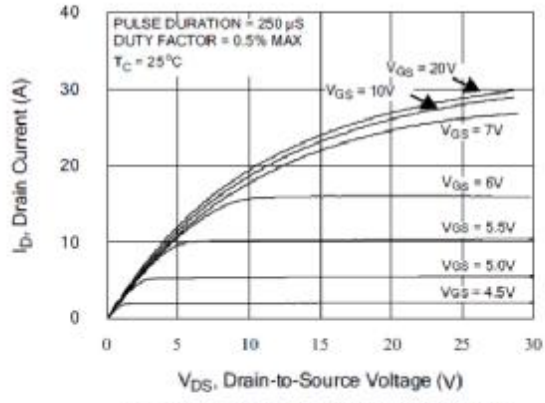


Figure 4. Typical Output Characteristics

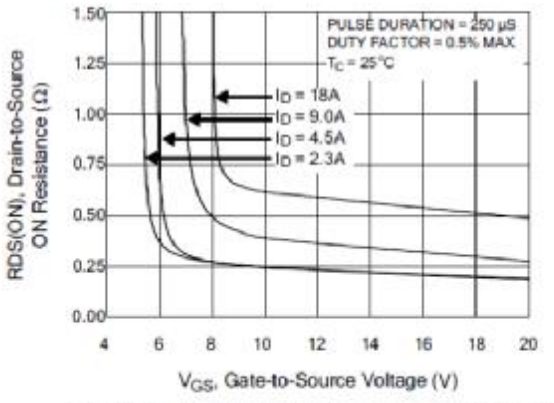


Figure5. Typical Drain-to-Source ON Resistance vs Gate Voltage and Drain Current

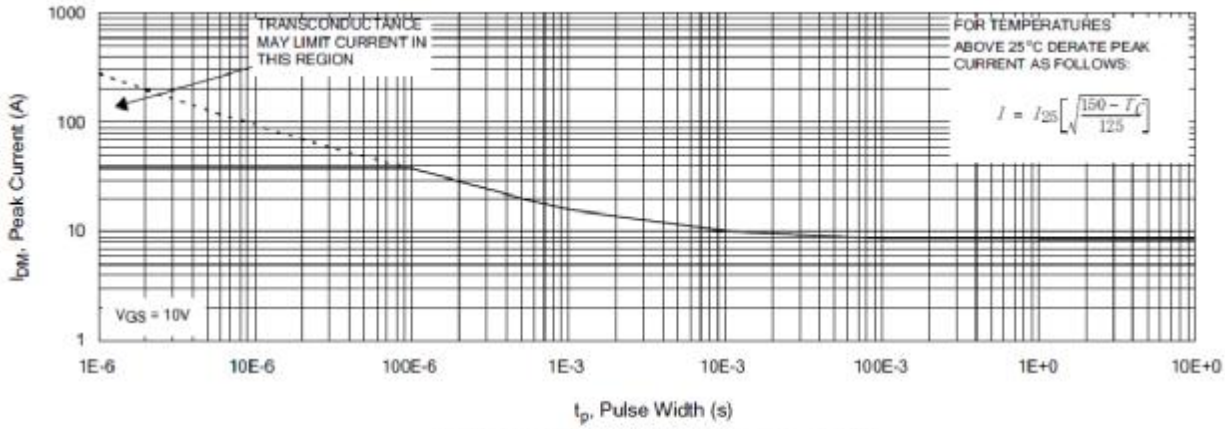


Figure 6. Maximum Peak Current Capability

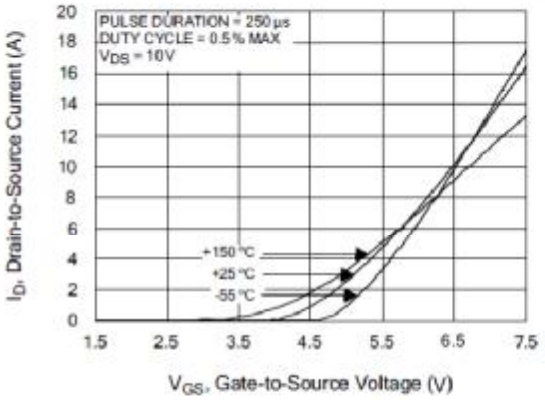


Figure 7. Typical Transfer Characteristics

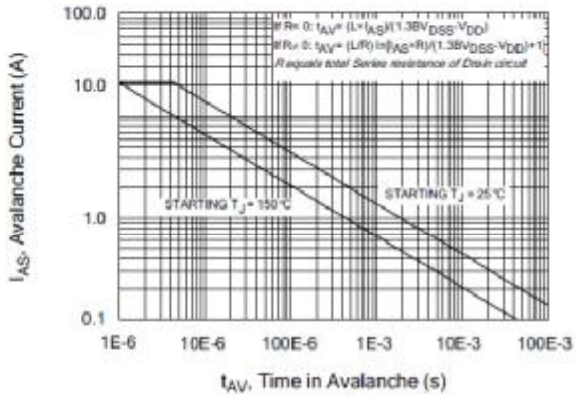


Figure8. Unclamped Inductive Switching Capability

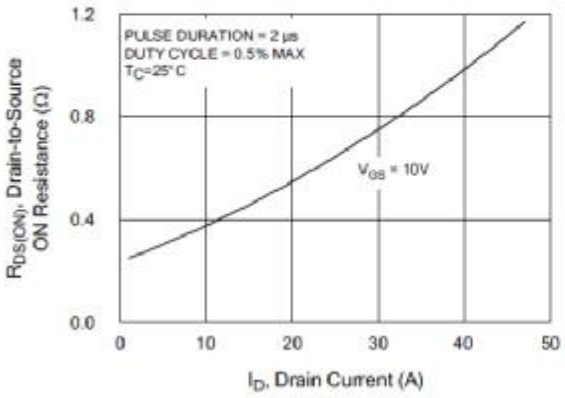


Figure 9. Typical Drain-to-Source ON Resistance vs Drain Current

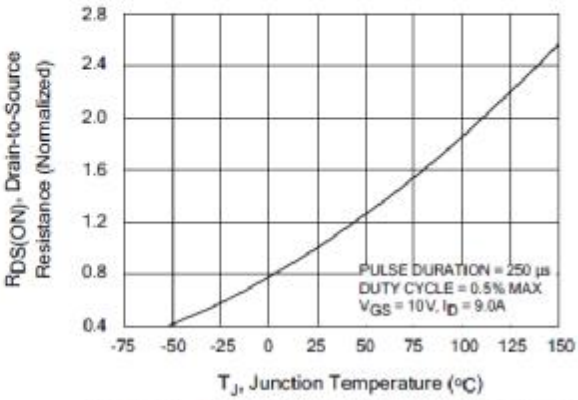


Figure 10. Typical Drain-to-Source ON Resistance vs Junction Temperature

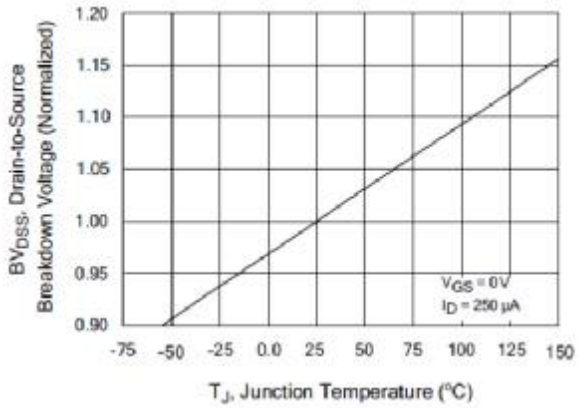


Figure 11. Typical Breakdown Voltage vs Junction Temperature

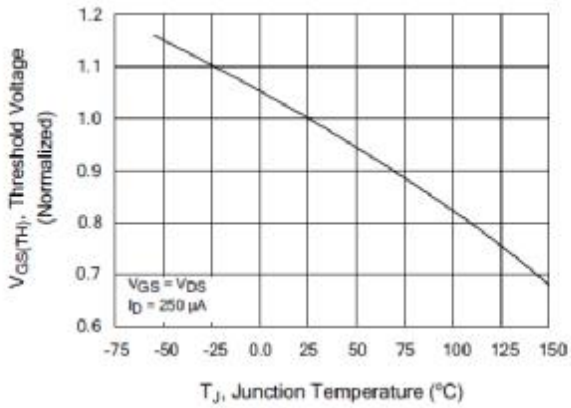


Figure 12. Typical Threshold Voltage vs Junction Temperature

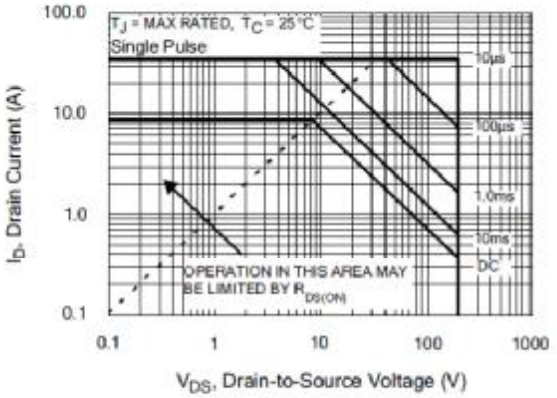


Figure 13. Maximum Forward Bias Safe Operating Area

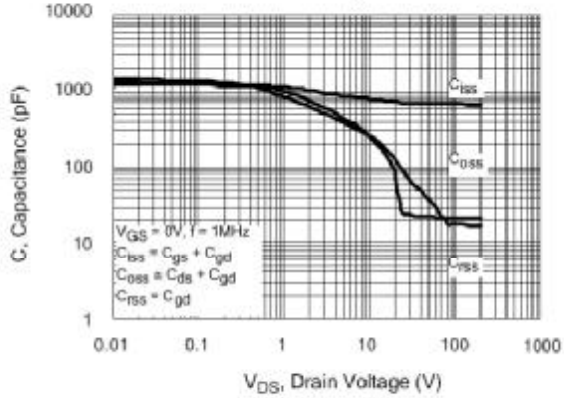


Figure 14. Typical Capacitance vs Drain-to-Source Voltage

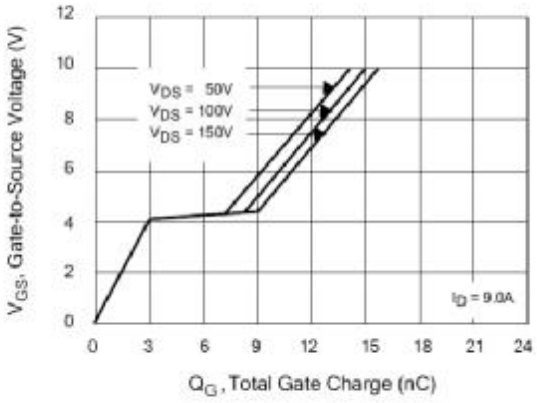


Figure 15. Typical Gate Charge vs Gate-to-Source Voltage

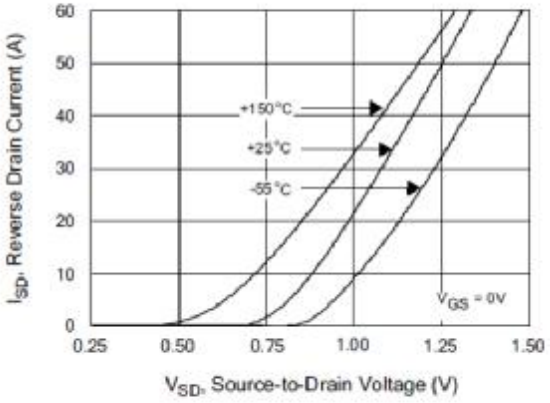


Figure 16. Typical Body Diode Transfer Characteristics