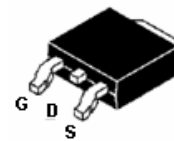
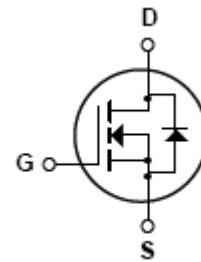


## N-Channel MOSFET

### FEATURES

- $R_{DS(ON)}$ (Max 1.5Ω) @ $V_{GS}=10V$
- Gate Charge (Typical 18.5nC)
- Improved dv/dt Capability
- 100% Avalanche Tested


**TO-252**

### MAXIMUM RATING operating temperature range applies unless otherwise specified

Symbol	Parameter	Value	Units
$V_{DSS}$	Drain-Source voltage( $V_{GS}=0$ )	500	V
$V_{GSS}$	Gate -Source voltage	$\pm 30$	V
$I_D$	Drain current (continuous) at $T_C = 25^\circ C$	5.0	A
$I_D$	Drain peak current(continuous) at $T_C = 100^\circ C$	3.4	A
$I_{DM}$	Drain Current (pulsed)	21.2	A
$V_{GSS}$	Gate -Source voltage	$\pm 20$	V
$P_D$	Total Power Dissipation at $T_C = 25^\circ C$	98.4	W
	Derating Factor above $25^\circ C$	0.78	W/ $^\circ C$
$E_{AS}$	Single Pulsed Acalanche Energy	390	mJ
$E_{AR}$	Pepetitive Acalanche Energy	9.84	mJ
dv/dt	Peak Diode Recovery dv/dt	4.5	V/ns
$T_{STG}, T_j$	Storage Temperature and Operating Junction Temperature	-55 ~ +150	$^\circ C$
$T_L$	Maximum Lead Temperature for soldering purpose, 1/8 from Case for 5 seconds	300	$^\circ C$

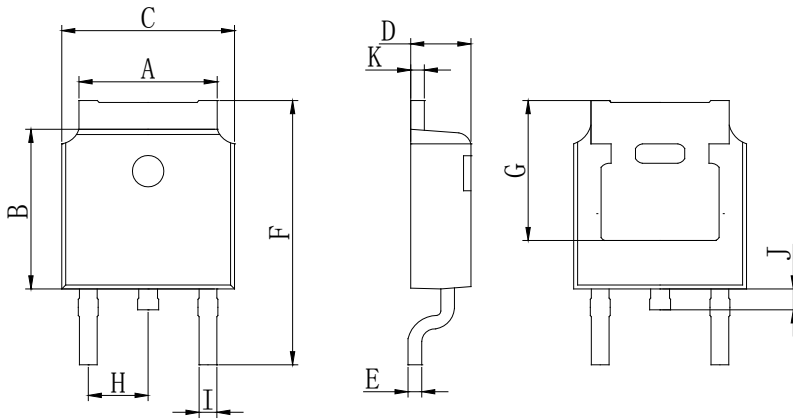
**ELECTRICAL CHARACTERISTICS** @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	500	-	-	V
Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	$I_D=250\mu A$	-	0.47	-	V/°C
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=500V, V_{GS}=0V$	-	-	1	$\mu A$
Gate-body Leakage	Forward	$V_{DS}=0V, V_{GS}=30V$	-	-	100	nA
	Reverse	$V_{DS}=0V, V_{GS}=-30V$	-	-	-100	nA
<b>ON CHARACTERISTICS</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0	-	3.5	
Static drain-Source on-resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=2.65A,$	1.3	-	1.5	$\Omega$
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$	-	608	-	pF
Output Capacitance	$C_{oss}$		-	75	-	pF
Reverse Transfer Capacitance	$C_{rss}$		-	25	-	pF
<b>SWITCHING CHARACTERISTICS</b>						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=250V, I_D=5.0A, R_G=25\Omega$	-	60	42	ns
Turn-On Rise Time	$t_R$		-	49	108	ns
Turn-Off Delay Time	$t_{d(off)}$		-	60	130	ns
Turn-Off Fall Time	$t_f$		-	49	108	ns
Total Gate Charge	$Q_g$	$V_{DS}=400V, I_D=5.3A, V_{GS}=10V$	-	18.5	23	nC
Gate-Source Charge	$Q_{gs}$		-	4	-	nC
Gate-Drain Charge	$Q_{gd}$		-	8	-	nC
<b>DRAIN-SOURCE DIODE CHARACTERISTICS</b>						
Maximum Continuous Drain-Source Diode Forward Current	$I_S$		-	-	5.3	A
Maximum Pulsed Drain-Source Diode Forward Current	$I_{SM}$		-	-	21.2	A
Drain-Source Recovery Charge	$V_{SD}$	$V_{GS}=0V, I_S=5.3A$	-	-	1.5	V
Reverse Recovery Time	$t_{rr}$	$V_{GS}=0V, I_S=5.3A,$	-	302	-	ns
Reverse Recovery Charge	$Q_{rr}$	$di_F/dt=100A/\mu s$	-	1.8	-	$\mu C$

**PACKAGE OUTLINE**

Plastic surface mounted package

TO-252



TO-252		
A	5.05	5.65
B	5.80	6.40
C	6.25	6.85
D	2.20	2.40
E	0.40	0.60
F	9.71	10.31
G	5.05	5.65
H	2.10	2.50
I	0.70	0.90
J	0.50	0.7
K	0.40	0.60
All Dimensions in mm		

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