

Features

- $V_{DS} = 200V$
- $I_D = 6.0A$
- $R_{DS(ON)} \leq 0.65\Omega @V_{GS} = 10V$

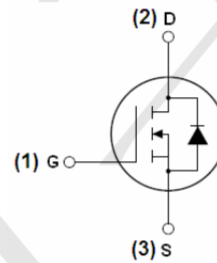
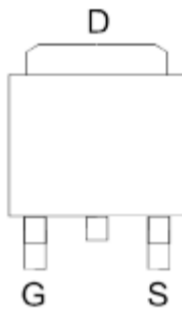
Application

- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

Package and Pin Configuration

(TO-252-3L)

Top View



Marking:



Absolute Maximum Ratings ($T_A=25^\circ C$ unless otherwise noted)

Characteristics	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	200	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current	I_D	$T_C=25^\circ C$	6.0
		$T_C=100^\circ C$	3.5
Pulsed Drain Current ⁽¹⁾	I_{DM}	20	A
Power Dissipation	P_D	$T_C=25^\circ C$	38.4
		Derate above $25^\circ C$	0.31
Peak Diode Recovery dv/dt ⁽³⁾	dv/dt	4.5	V/ns
Repetitive Pulse Avalanche Energy ⁽¹⁾	E_{AR}	3.84	mJ
Avalanche current ⁽¹⁾	I_{AR}	5.0	A
Single Pulse Avalanche Energy ⁽⁴⁾	E_{AS}	62.5	mJ
Junction and Storage Temperature Range	T_J, T_{stg}	-55~150	$^\circ C$

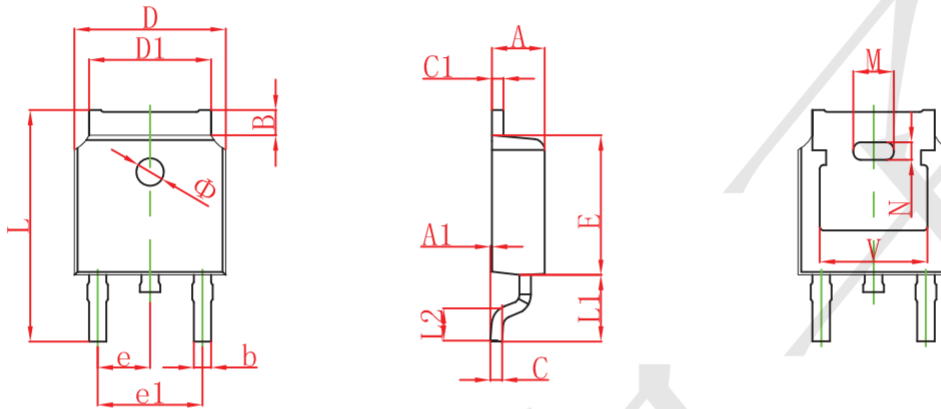
Thermal Characteristics

Characteristics	Symbol	Rating	Unit
Thermal Resistance, Junction-to-Ambient ⁽¹⁾	$R_{\theta JA}$	110	$^\circ C/W$
Thermal Resistance, Junction-to-Case ⁽¹⁾	$R_{\theta JC}$	3.25	

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = 250\mu\text{A}, V_{GS} = 0\text{V}$	200	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	2.0	3.0	4.0	
Drain Cut-Off Current	I_{DSS}	$V_{DS} = 160\text{V}, V_{GS} = 0\text{V}$	-	-	1	μA
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 20\text{V}, V_{DS} = 0\text{V}$	-	-	100	nA
Drain-Source ON Resistance	$R_{DS(ON)}$	$V_{GS} = 10\text{V}, I_D = 1.0\text{A}$	-	0.5	0.69	Ω
Forward Transconductance	g_{fs}	$V_{DS} = 30\text{V}, I_D = 2.5\text{A}$	-	2.7	-	S
Dynamic Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 200\text{V}, I_D = 7\text{A}, V_{GS} = 10\text{V}$	-	5.1	-	nC
Gate-Source Charge	Q_{gs}		-	1.5	-	
Gate-Drain Charge	Q_{gd}		-	2.0	-	
Input Capacitance	C_{iss}	$V_{DS} = 25\text{V}, V_{GS} = 0\text{V}, f = 1.0\text{MHz}$	-	182	-	pF
Reverse Transfer Capacitance	C_{riss}		-	5.6	-	
Output Capacitance	C_{oss}		-	46.9	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = 10\text{V}, V_{DS} = 100\text{V}, I_D = 7\text{A}, R_G = 25\Omega$	-	6.3	-	ns
Rise Time	t_r		-	23	-	
Turn-Off Delay Time	$t_{d(off)}$		-	10.7	-	
Fall Time	t_f		-	19.5	-	
Drain-Source Body Diode Characteristics						
Maximum Continuous Drain to Source Diode Forward Current	I_S		-	6.0	-	A
Source-Drain Diode Forward Voltage	V_{SD}	$I_S = 7.0\text{A}, V_{GS} = 0\text{V}$	-	-	1.4	V
Body Diode Reverse Recovery Time	t_{rr}	$I_F = 7.0\text{A}, di/dt = 100\text{A}/\mu\text{s}$	-	88	-	ns
Body Diode Reverse Recovery Charge	Q_{rr}		-	0.25	-	μC

TO252 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.380	0.087	0.094
A1	0.000	0.100	0.000	0.004
B	0.800	1.400	0.031	0.055
b	0.710	0.810	0.028	0.032
c	0.460	0.560	0.018	0.022
c1	0.460	0.560	0.018	0.022
D	6.500	6.700	0.256	0.264
D1	5.130	5.460	0.202	0.215
E	6.000	6.200	0.236	0.244
e	2.286 TYP.		0.090 TYP.	
e1	4.327	4.727	0.170	0.186
M	1.778REF.		0.070REF.	
N	0.762REF.		0.018REF.	
L	9.800	10.400	0.386	0.409
L1	2.9REF.		0.114REF.	
L2	1.400	1.700	0.055	0.067
V	4.830 REF.		0.190 REF.	
Φ	1.100	1.300	0.043	0.051