

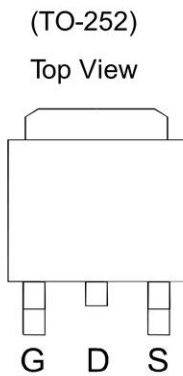
**Features**

- $V_{DS} -100V$   
 $I_D -13A$   
 $R_{DS(ON)}$  (at  $V_{GS}=-10V$ ) < 210m $\Omega$

**Application**

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

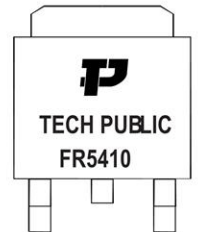
**Package and Pin Configuration**



1. GATE
2. DRAIN
3. SOURCE



**Marking:**



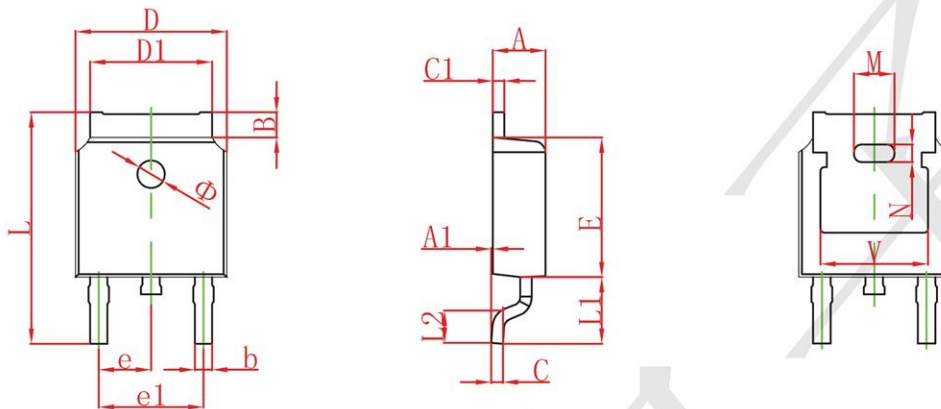
**Absolute Maximum Ratings ( $T_A=25^{\circ}C$  unless otherwise noted)**

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	-100	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	
Continuous Drain Current	$I_D$	-13	A
Pulsed Drain Current ①	$I_{DM}$	-30	
Continuous Source-Drain Current(Diode Conduction)	$I_S$	13	
Power Dissipation ②	$P_D$	66	W
Thermal Resistance from Junction to Ambient ( $t \leq 5s$ )	$R_{\theta JA}$	110	$^{\circ}C/W$
Operating Junction	$T_J$	175	$^{\circ}C$
Storage Temperature	$T_{STG}$	-55~+175	$^{\circ}C$

**Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static Parameters</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-100			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-2		-4	V
Gate-Body leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±20V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -100V, V <sub>GS</sub> = 0V			-1	μA
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = -10V, I <sub>D</sub> = -6A		180	210	mΩ
Forward Transconductance	g <sub>fs</sub>	V <sub>DS</sub> = -50V, I <sub>D</sub> = -12A		3.2		S
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> = -1A, V <sub>GS</sub> = 0V		-0.8	-1.2	V
<b>Dynamic Parameters</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -30V, V <sub>GS</sub> = 0V, f = 1MHz		760		pF
Output Capacitance	C <sub>oss</sub>			260		pF
Reverse Transfer Capacitance	C <sub>rss</sub>			170		pF
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -80V, V <sub>GS</sub> = - 10V, I <sub>D</sub> = -12A		58		nC
Gate Source Charge	Q <sub>gs</sub>			8.3		nC
Gate Drain Charge	Q <sub>gd</sub>			32		nC
<b>Switching Parameters</b>						
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>DD</sub> = -50V R <sub>L</sub> = 10Ω, I <sub>D</sub> = -8.4A, V <sub>GEN</sub> = -10V, R <sub>g</sub> = 9Ω		130		ns
Turn-On Rise Time	t <sub>r</sub>			130		ns
Turn-Off DelayTime	t <sub>d(off)</sub>			135		ns
Turn-Off Fall Time	t <sub>f</sub>			140		ns

**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

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