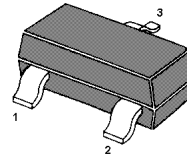
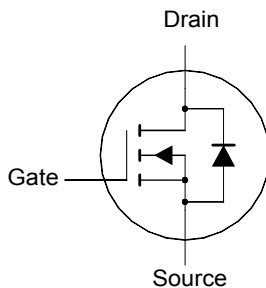


## N-Channel Logic Level Enhancement

### Mode Field Effect Transistor

for low voltage, low current switching applications



1. Gate 2. Source 3. Drain  
SOT-23 Plastic Package

### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DSS}$	50	V
Drain-Gate Voltage ( $R_{GS} \leq 20\text{ K}\Omega$ )	$V_{DGR}$	50	V
Gate-Source Voltage - Continuous	$V_{GSS}$	$\pm 20$	V
Gate-Source Voltage - Non-Repetitive ( $T_P < 50\text{ }\mu\text{s}$ )		$\pm 40$	
Drain Current - Continuous	$I_D$	220	mA
Drain Current - Pulsed		880	
Total Power Dissipation	$P_{tot}$	360	mW
Operating and Storage Temperature Range	$T_j, T_s$	- 55 to + 150	$^\circ\text{C}$

### Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	350	K/W

### Characteristics at $T_a = 25\text{ }^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Min.	Max.	Unit
Drain-Source Breakdown Voltage at $I_D = 250\text{ }\mu\text{A}$	$V_{(BR)DSS}$	50	-	V
Drain-Source Leakage Current at $V_{DS} = 50\text{ V}$ at $V_{DS} = 30\text{ V}$	$I_{DSS}$	- -	500 100	nA
Gate-Source Leakage Current at $V_{GS} = \pm 20\text{ V}$	$I_{GSS}$	-	$\pm 100$	nA
Gate-Source Threshold Voltage at $V_{GS} = V_{DS}$ , $I_D = 1\text{ mA}$	$V_{GS(th)}$	0.8	1.6	V
Drain-Source On-State Resistance at $V_{GS} = 10\text{ V}$ , $I_D = 220\text{ mA}$ at $V_{GS} = 4.5\text{ V}$ , $I_D = 220\text{ mA}$	$R_{DS(on)}$	- -	3.5 6	$\Omega$
Forward Transconductance at $V_{DS} = 10\text{ V}$ , $I_D = 220\text{ mA}$	$g_{FS}$	0.12	-	S
Input Capacitance at $V_{DS} = 25\text{ V}$ , $f = 1\text{ MHz}$	$C_{iss}$	-	60	pF
Output Capacitance at $V_{DS} = 25\text{ V}$ , $f = 1\text{ MHz}$	$C_{oss}$	-	25	pF
Reverse Transfer Capacitance at $V_{DS} = 25\text{ V}$ , $f = 1\text{ MHz}$	$C_{rss}$	-	10	pF
Turn-On Delay Time at $V_{DD} = 30\text{ V}$ , $I_D = 290\text{ mA}$ , $V_{GS} = 10\text{ V}$ , $R_G = 50\text{ }\Omega$	$t_{d(on)}$	-	8	ns
Turn-On Rise Time at $V_{DD} = 30\text{ V}$ , $I_D = 290\text{ mA}$ , $V_{GS} = 10\text{ V}$ , $R_G = 50\text{ }\Omega$	$t_r$	-	12	ns
Turn-Off Delay Time at $V_{DD} = 30\text{ V}$ , $I_D = 290\text{ mA}$ , $V_{GS} = 10\text{ V}$ , $R_G = 50\text{ }\Omega$	$t_{d(off)}$	-	16	ns
Turn-Off Fall Time at $V_{DD} = 30\text{ V}$ , $I_D = 290\text{ mA}$ , $V_{GS} = 10\text{ V}$ , $R_G = 50\text{ }\Omega$	$t_f$	-	22	ns

### Drain-Source Diode Characteristics and Maximum Ratings

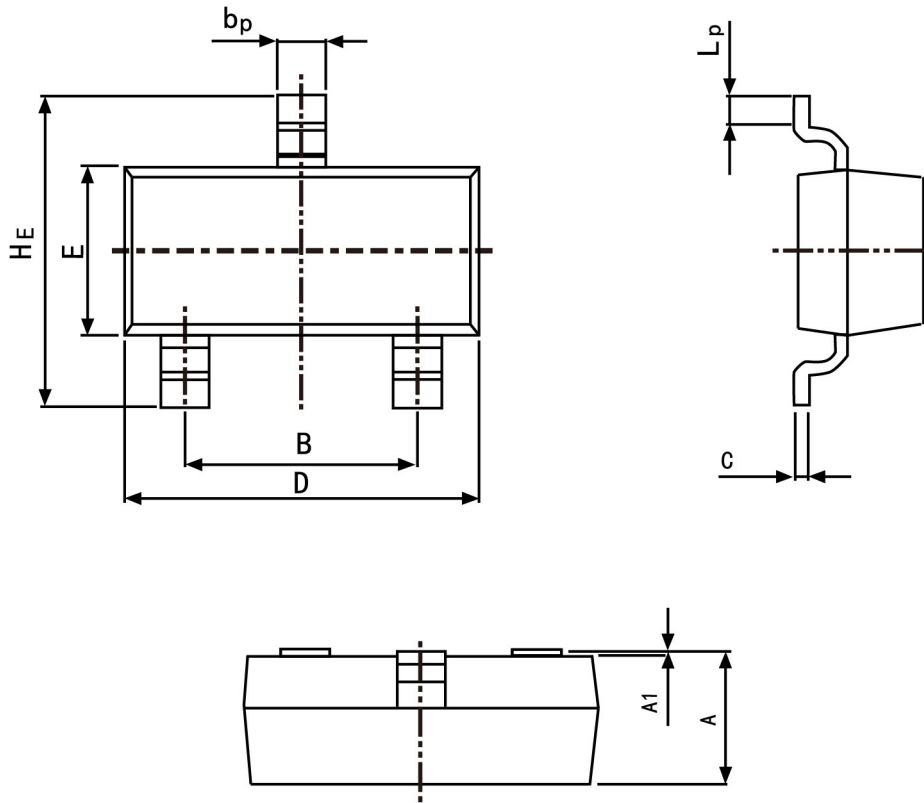
Parameter	Symbol	Min.	Max.	Unit
Maximum Continuous Source Current	$I_S$	-	220	mA
Maximum Pulse Source Current	$I_{SM}$	-	880	mA
Drain-Source Diode Forward Voltage at $I_S = 440\text{ mA}$	$V_{GD}$	-	1.4	V



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



Symbol	Dimension in Millimeters	
	Min	Max
A	0.95	1.40
B	1.78	2.04
bp	0.35	0.50
C	0.08	0.19
D	2.70	3.10
E	1.20	1.65
HE	2.20	3.00
A1	0.100	0.013
Lp	0.20	0.50