

## Features

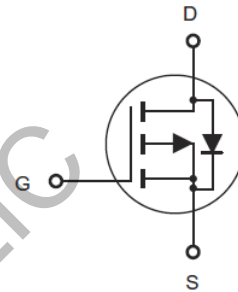
- $V_{DS}$  -20V
- $I_D$  -2.0A
- $R_{DS(ON)}$ ( at  $V_{GS}=-4.5V$ ) < 130 mohm
- $R_{DS(ON)}$ ( at  $V_{GS}=-2.5V$ ) < 170 mohm
- $R_{DS(ON)}$ ( at  $V_{GS}=-1.8V$ ) < 250 mohm

## Applications

- Battery protection
- Load switch
- Power management



SOT323



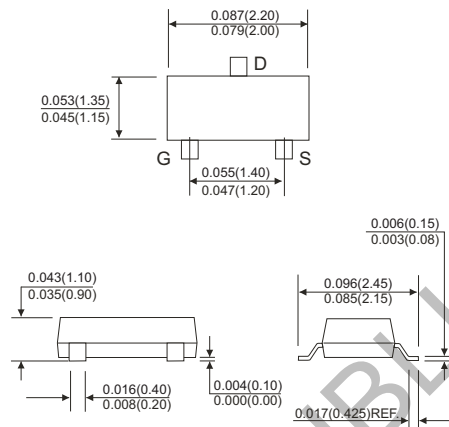
## Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Maximum	Unit	
Drain-source Voltage	$V_{DS}$	-20	V	
Gate-source Voltage	$V_{GS}$	$\pm 10$	V	
Drain Current	$I_D$	$T_A=25^\circ\text{C}$ @ Steady State	-2.0	A
		$T_A=70^\circ\text{C}$ @ Steady State	-1.6	
Pulsed Drain Current <sup>A</sup>	$I_{DM}$	-8	A	
Total Power Dissipation @ $T_A=25^\circ\text{C}$	$P_D$	0.45	W	
Thermal Resistance Junction-to-Ambient <sup>B</sup>	$R_{\theta JA}$	278	$^\circ\text{C}/\text{W}$	
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~+150	$^\circ\text{C}$	

**Electrical Characteristics** (T =25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-20V, V_{GS}=0V, T_C=25^\circ C$			-1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}= \pm 10V, V_{DS}=0V$			$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.4	-0.62	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}= -4.5V, I_D=-1.5A$		100	130	m $\Omega$
		$V_{GS}= -2.5V, I_D=-1.2A$		130	170	
		$V_{GS}= -1.8V, I_D=-1.0A$		165	250	
Diode Forward Voltage	$V_{SD}$	$I_S=-2.0A, V_{GS}=0V$		-0.8	-1.2	V
Maximum Body-Diode Continuous Current	$I_S$				-2.0	A
<b>Dynamic Parameters</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=-10V, V_{GS}=0V, f=1MHz$		290		pF
Output Capacitance	$C_{oss}$			47		
Reverse Transfer Capacitance	$C_{rss}$			29		
<b>Switching Parameters</b>						
Total Gate Charge	$Q_g$	$V_{GS}=-4.5V, V_{DS}=-10V, I_D=-1.0A$		3.9		nC
Gate Source Charge	$Q_{gs}$			0.7		
Gate Drain Charge	$Q_{gd}$			0.9		
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=-4.5V, V_{DD}=-10V, I_D=-1A, R_{GEN}=2.5\Omega$		12		ns
Turn-on Rise Time	$t_r$			54		
Turn-off Delay Time	$t_{D(off)}$			15		
Turn-off Fall Time	$t_f$			9		

**Outline Drawing - SOT323**



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