

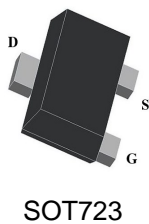
### Product Summary

- \*  $R_{DS(on)} = \text{Typ } 530\text{m}\Omega @ V_{GS} = -4.5\text{V}$
- \*  $R_{DS(on)} = \text{Typ } 730\text{m}\Omega @ V_{GS} = -2.5\text{V}$
- \* Lead free product is acquired
- \* Surface mount package
- \* P-channel switch with low  $R_{DS(on)}$
- \* Operated at low logic level gate drive
- \* ESD protection

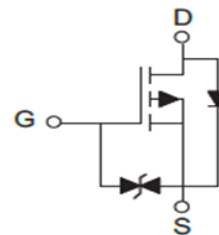
### Application

- \* Load/Power switch
- \* Interfacing, logic switching
- \* Battery management for ultra portable electronics

### Package and Pin Configuration



### Circuit diagram



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

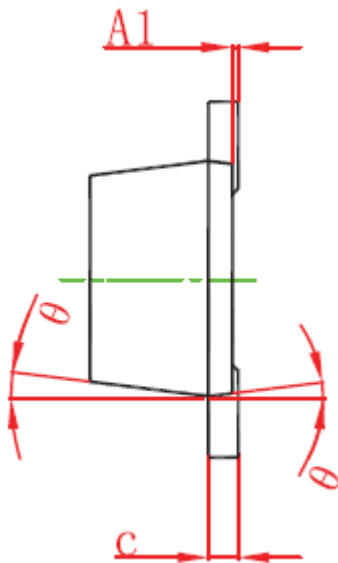
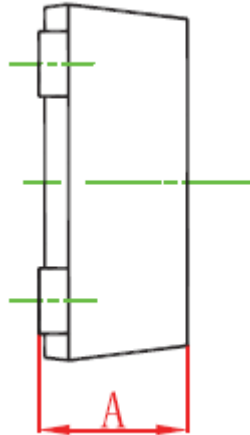
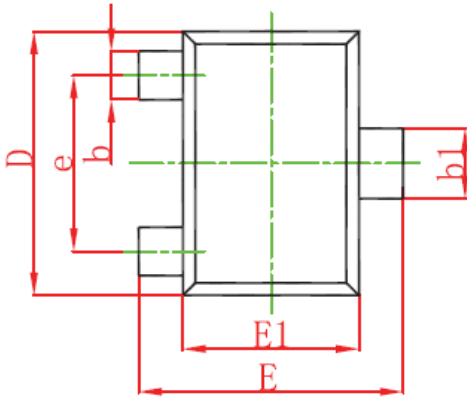
Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	-20	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Continuous Drain Current @25°C (note 1)	$I_D$	-0.85	A
Pulsed Drain Current @25°C ( $t_p = 10 \mu\text{s}$ )	$I_{DM}$	-2.1	A
Diode Continuous Forward Current	$I_S$	-0.5	A
Power Dissipation @25°C (note 1)	$P_D$	690	mW
Thermal Resistance from Junction to Ambient (note 1)	$R_{QJA}$	180	$^\circ\text{C}/\text{W}$
Maximum Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Drain-source Breakdown Voltage	$V_{(BR)DS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Drain-to-Source Leakage Current	$I_{DS}$	$V_{DS} = -16V, V_{GS} = 0V$			-1	$\mu A$
Gate-Body Leakage Current	$I_{GS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$			$\pm 10$	$\mu A$
Gate Threshold Voltage (note 2)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.5	-0.75	-1	V
Static Drain-Source On-Resistance (note 2)	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -0.55A$		530	640	$m\Omega$
		$V_{GS} = -2.5V, I_D = -0.45A$		730	950	$m\Omega$
		$V_{GS} = -1.8V, I_D = -0.35A$		1300	1950	$m\Omega$
Forward transconductance (note 2)	$g_{fs}$	$V_{DS} = -5V, I_D = -0.55A$		1		S
Diode forward voltage	$V_{SD}$	$I_S = -1A, V_{GS} = 0V$		-0.75	-1.1	V
Dynamic Characteristics (note 4)						
Total Gate Charge	$Q_g$	$V_{DS} = -10V, I_D = -1A,$ $V_{GS} = -2.5V$		0.53		nC
Total Gate Charge	$Q_g$	$V_{DS} = -10V$		0.8		nC
Gate-Source Charge	$Q_{gs}$	$I_D = -1A$		0.2		nC
Gate-Drain Charge	$Q_{gd}$	$V_{GS} = -4.5V$		0.2		nC
	$t_{rr}$	$I = -$		9.2		nS
Reverse Recovery Time	$t_{rr}$	$I_F = -1A, V_{GS} = 0,$		9.2		nS
Reverse Recovery Charge	$Q_{rr}$	$dI_F/dt = 100A/\mu s$		0.8		nC
Input capacitance	$C_{iss}$	$V_{DS} = -10V$		58		pF
Output capacitance	$C_{oss}$	$V_{GS} = 0V$		5.7		pF
Reverse transfer capacitance	$C_{rss}$	$f = 1MHz$		4.4		pF
Turn-on delay time (note 3)	$t_{d(on)}$	$V_{GS} = -4.5V$		0.4		$\mu s$
Turn-on rise time (note 3)	$t_r$	$V_{DS} = -10V$		0.06		$\mu s$
Turn-off delay time (note3)	$t_{d(off)}$	$I_D = -1.33A$		0.02		$\mu s$
Turn-off fall time (note 3)	$t_f$	$R_{GEN} = 3\Omega$		0.8		$\mu s$

**SOT723 - Package Outline Drawing**

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Symbol	DIMENSIONS			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.43	0.50	0.017	0.020
A1	0.00	0.05	0.000	0.002
b	0.17	0.27	0.007	0.011
b1	0.27	0.37	0.011	0.015
c	0.08	0.15	0.003	0.006
D	1.15	1.25	0.045	0.049
E	1.15	1.25	0.045	0.049
E1	0.75	0.85	0.03	0.033
e	0.8 typ		0.031 typ	
$\theta$	7° REF		7° REF	

**Suggested Land Pattern**

