



#### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
-50V	1.8Ω@-10V	-0.13A
	2.3Ω@-4.5V	

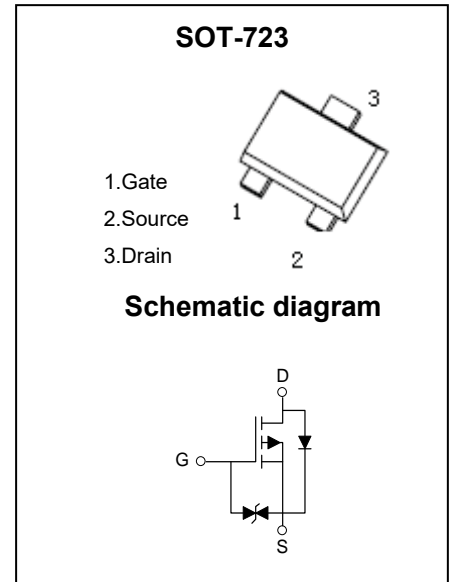
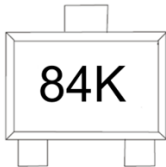
#### Feature

- Trench Technology Power MOSFET
- Low  $R_{DS(ON)}$
- Low Gate Charge
- ESD Protected

#### Application

- Load Switch
- DC/DC Converter

#### MARKING:



#### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	$V_{DS}$	-50	V
Gate - Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current <sup>1,5</sup>	$I_D$	-0.13	A
Pulsed Drain Current <sup>2</sup>	$I_{DM}$	-0.52	A
Power Dissipation <sup>4,5</sup>	$P_D$	300	mW
Thermal Resistance from Junction to Ambient <sup>5</sup>	$R_{\theta JA}$	417	°C/W
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{STG}$	-55~ +150	°C

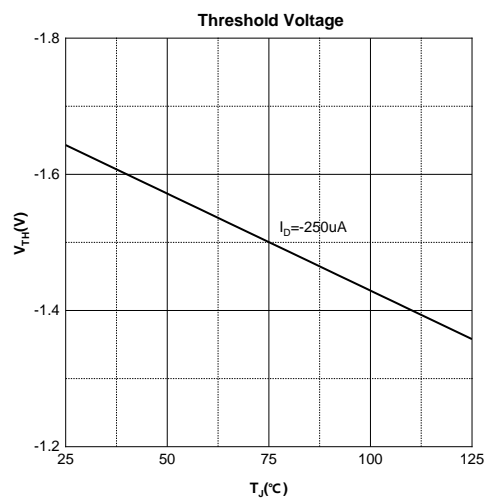
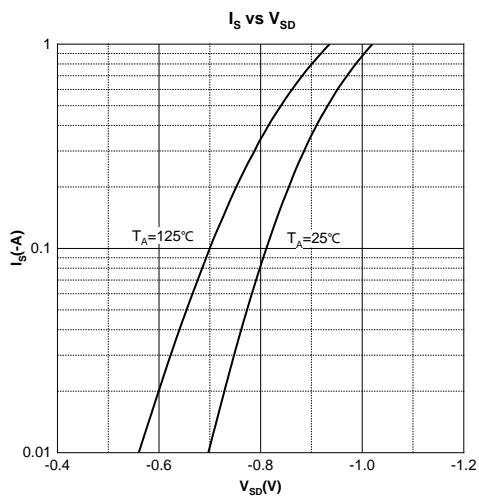
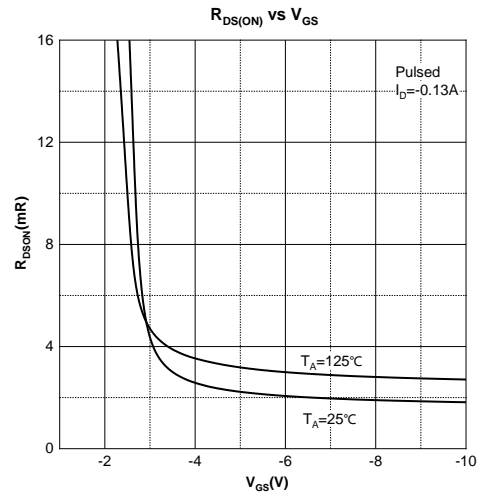
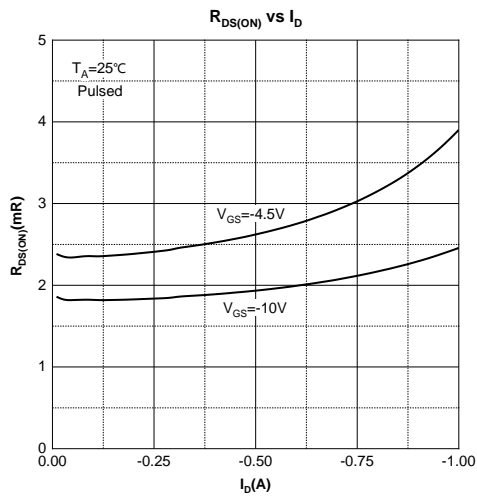
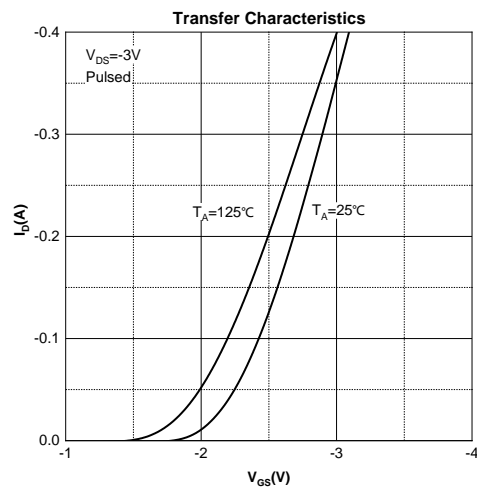
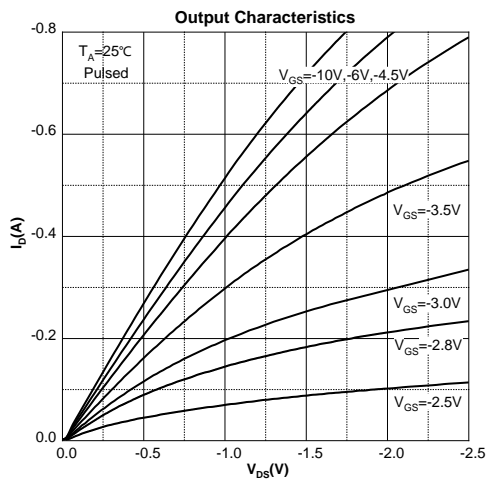
## MOSFET ELECTRICAL CHARACTERISTICS ( $T_J = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Off Characteristics</b>						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-50			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -50V, V_{GS} = 0V$			-1	$\mu A$
Gate - Body Leakage Current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			$\pm 10$	$\mu A$
<b>On Characteristics<sup>3</sup></b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1	-1.6	-3	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -0.1A$		1.8	2.7	$\Omega$
		$V_{GS} = -4.5V, I_D = -0.1A$		2.3	3.5	
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = -25V, V_{GS} = 0V, f = 1MHz$		37		pF
Output Capacitance	$C_{oss}$			9.7		
Reverse Transfer Capacitance	$C_{rss}$			5.8		
Gate Resistance	$R_g$	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		159		$\Omega$
<b>Switching Characteristics</b>						
Total Gate Charge	$Q_g$	$V_{DS} = -25V, V_{GS} = -10V, I_D = -1A$		2.1		nC
Gate-source Charge	$Q_{gs}$			0.4		
Gate-drain Charge	$Q_{gd}$			0.8		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -25V, V_{GS} = -10V, R_L = 50\Omega, R_G = 3\Omega$		11		ns
Turn-on Rise Time	$t_r$			6		
Turn-off Delay Time	$t_{d(off)}$			19		
Turn-off Fall Time	$t_f$			8		
<b>Source - Drain Diode Characteristics</b>						
Diode Forward Voltage <sup>3</sup>	$V_{SD}$	$V_{GS} = 0V, I_S = -0.13A$			-1.2	V

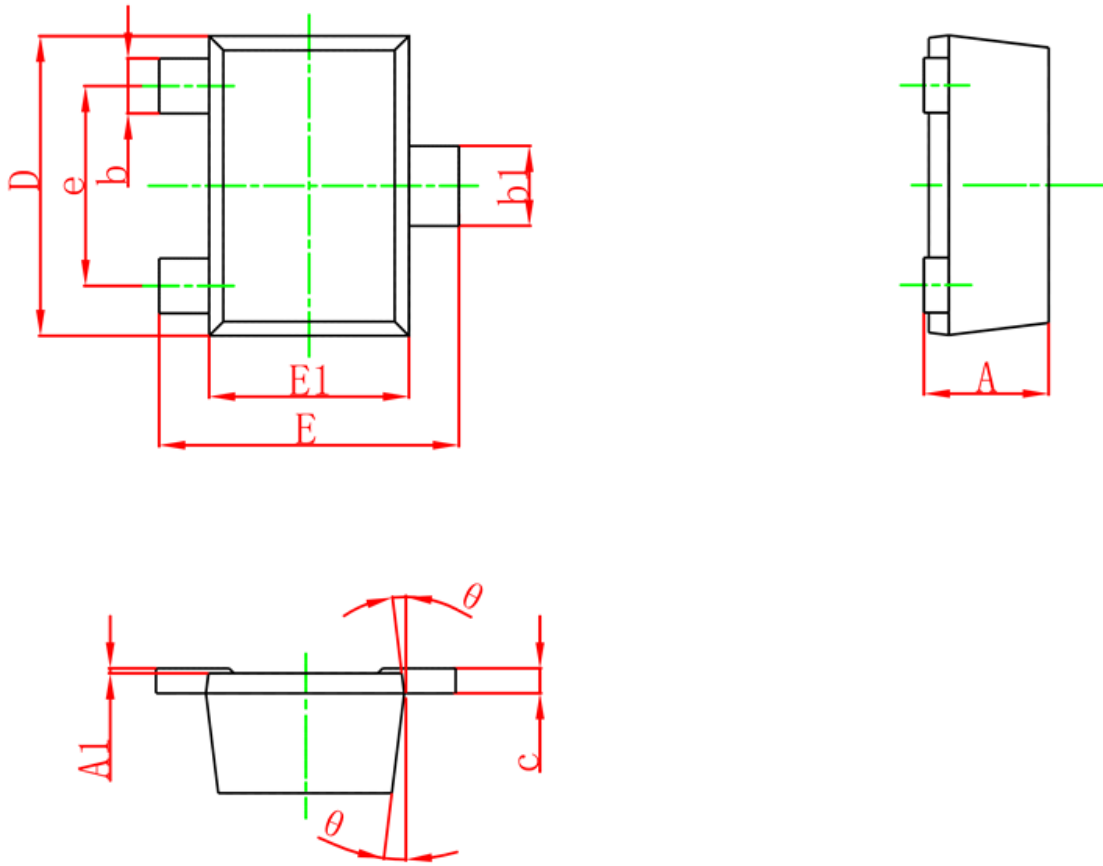
Notes :

- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width  $\leq 10\mu s$ , duty cycle  $\leq 1\%$ .
- 3.Pulse Test : Pulse Width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .
- 4.The power dissipation  $P_D$  is limited by  $T_{J(MAX)} = 150^\circ\text{C}$ .
- 5.Device mounted on  $1in^2$  FR-4 board with 2oz. Copper, in a still air environment with  $T_A = 25^\circ\text{C}$ .

## Typical Characteristics



## SOT-723 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
<b>A</b>	0.340	0.500	0.013	0.020
<b>A1</b>	0.000	0.050	0.000	0.002
<b>b</b>	0.150	0.270	0.006	0.011
<b>b1</b>	0.200	0.370	0.008	0.015
<b>c</b>	0.060	0.160	0.002	0.006
<b>D</b>	1.100	1.300	0.043	0.051
<b>E</b>	1.100	1.300	0.043	0.051
<b>E1</b>	0.700	0.900	0.028	0.035
<b>e</b>	0.8TYP		0.031TYP	
<b>θ</b>	8°REF		8°REF	