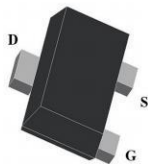


### Features

- Low on-resistance
- Fast switching speed
- Low voltage drive makes this device ideal for portable equipment\*
- Easily designed drive circuits
- Easy to parallel

### Package and Pin Configuration

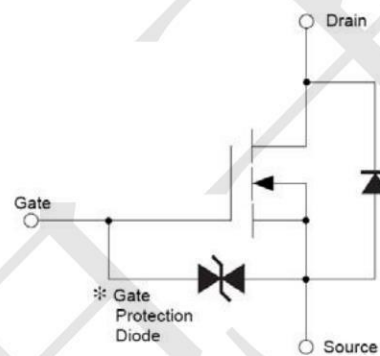


SOT723

### Application

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

### Circuit diagram



### Marking: DP

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

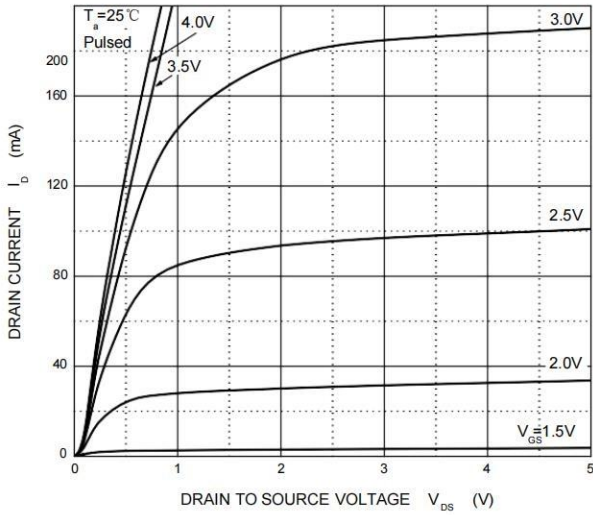
Symbol	Parameter	Value	Units
$V_{DS}$	Drain-Source Voltage	30	V
$V_{GSS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Continuous Drain Current	0.1	A
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	833	$^\circ\text{C}/\text{W}$
$P_D$	Power Dissipation	0.2	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~+150	$^\circ\text{C}$

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

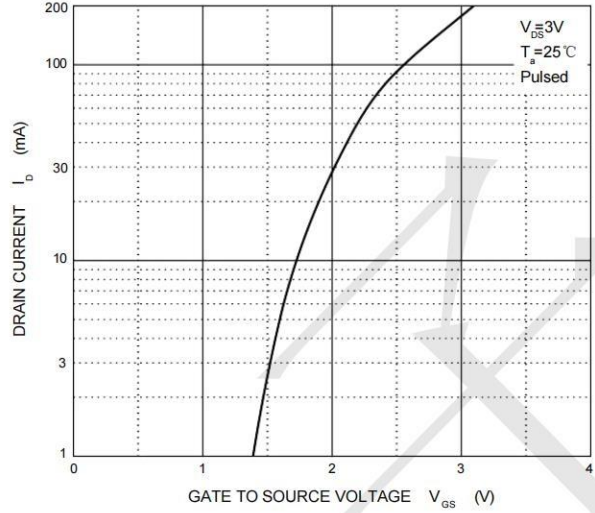
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
<b>Off Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{DS}$	$V_{GS} = 0V, I_D = 10\mu A$	30			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 30V, V_{GS} = 0V$			1	$\mu A$
Gate –Source leakage current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			$\pm 2$	$\mu A$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = 3V, I_D = 100\mu A$	0.8		1.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 4V, I_D = 10mA$			8	$\Omega$
		$V_{GS} = 2.5V, I_D = 1mA$			13	$\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS} = 3V, I_D = 10mA$	20			mS
<b>Dynamic Characteristics*</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 5V, V_{GS} = 0V, f = 1MHz$		13		pF
Output Capacitance	$C_{oss}$			9		pF
Reverse Transfer Capacitance	$C_{rss}$			4		pF
<b>Switching Characteristics*</b>						
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = 5V, V_{DD} = 5V,$ $I_D = 10mA, R_g = 10\Omega, R_L = 500\Omega,$		15		ns
Rise Time	$t_r$			35		ns
Turn-Off Delay Time	$t_{d(off)}$			80		ns
Fall Time	$t_f$			80		ns

### Typical Characteristics

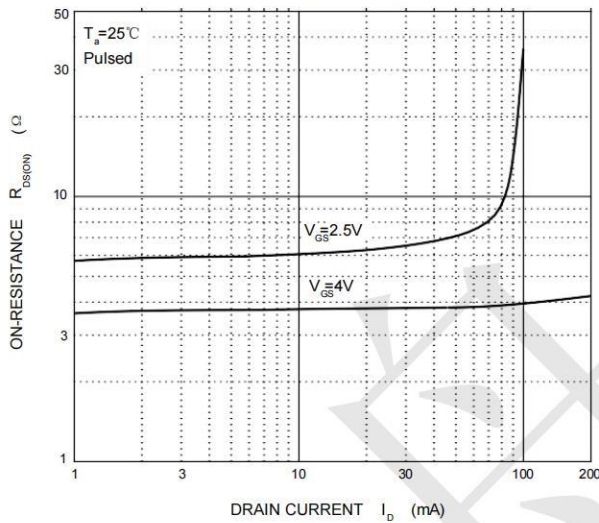
Output Characteristics



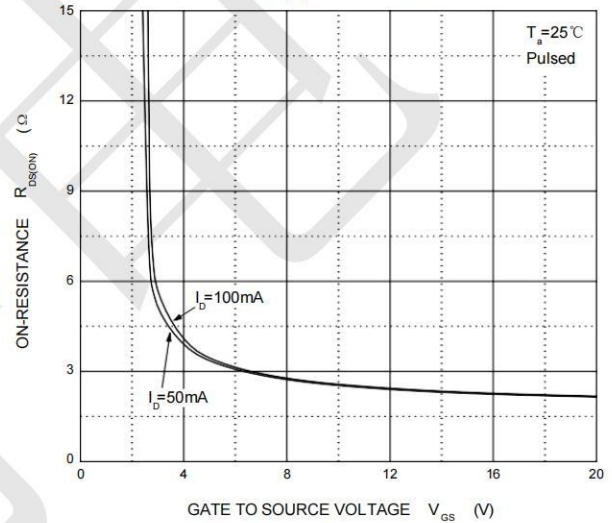
Transfer Characteristics



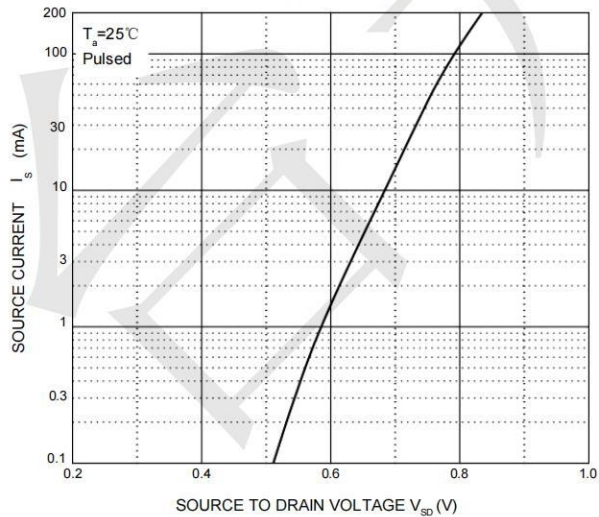
$R_{DS(ON)}$  —  $I_D$



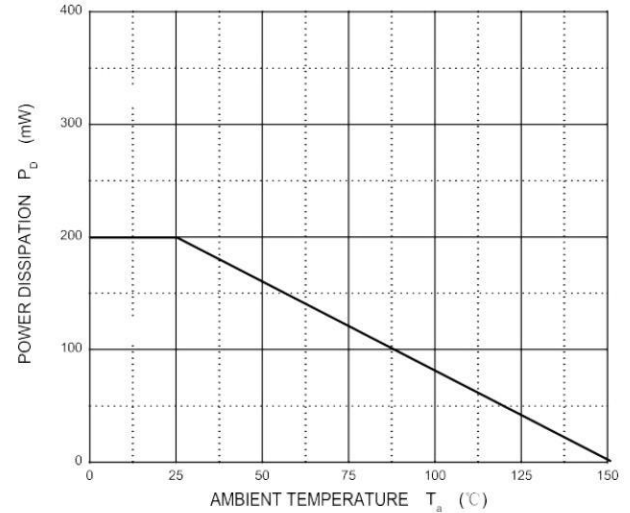
$R_{DS(ON)}$  —  $V_{GS}$



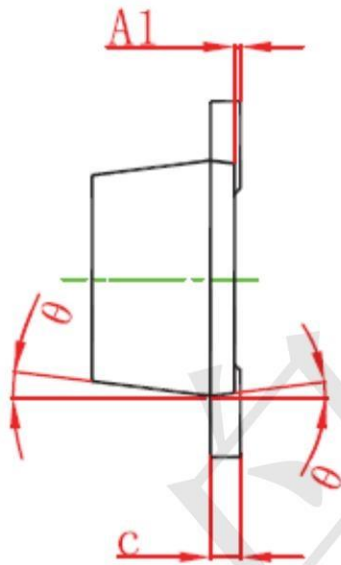
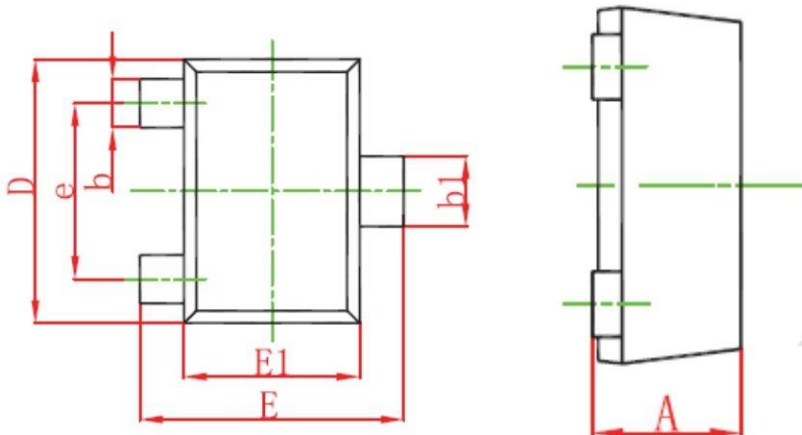
$I_S$  —  $V_{SD}$



$P_D$  —  $T_a$

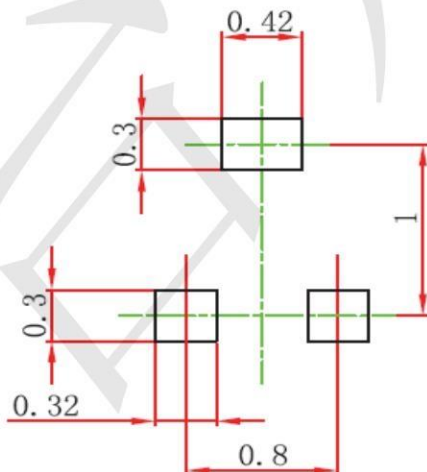


### SOT723-Package Outline Drawing



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



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