



# SPP1071

## P-Channel Enhancement Mode MOSFET

### DESCRIPTION

The SPP1071 is the P-Channel enhancement mode power field effect transistors are produced using high cell density , DMOS trench technology. This high density process is especially tailored to minimize on-state resistance and provide superior switching performance. These devices are particularly suited for low voltage applications such as notebook computer power management and other battery powered circuits where high-side switching , low in-line power loss, and resistance to transients are needed.

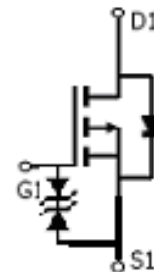
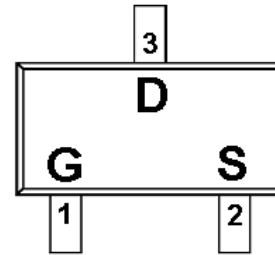
### FEATURES

- ◆ P-Channel  
 -20V/0.45A, $R_{DS(ON)}=0.52\Omega@V_{GS}=-4.5V$   
 -20V/0.35A, $R_{DS(ON)}=0.70\Omega@V_{GS}=-2.5V$   
 -20V/0.25A, $R_{DS(ON)}=1.5\Omega@V_{GS}=-1.8V$
- ◆ Super high density cell design for extremely low  $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOT-723 package design

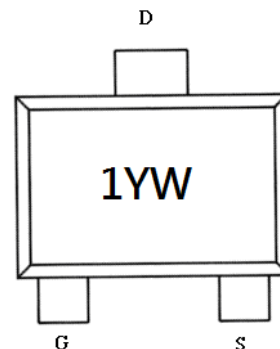
### APPLICATIONS

- Drivers : Relays/Solenoids/Lamps/Hammers
- Power Supply Converter Circuits
- Load/Power Switching Cell Phones, Pagers

### PIN CONFIGURATION( SOT-723 )



### PART MARKING





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### PIN DESCRIPTION

Pin	Symbol	Description
1	G	Gate
2	S	Source
3	D	Drain

### ORDERING INFORMATION

Part Number	Package	Part Marking
SPP1071S72RGB	SOT-723	1

※ SPP1071S72RGB : Tape Reel ; Pb – Free, Halogen – Free

### ABSOLUTE MAXIMUM RATINGS

( $T_A=25^{\circ}\text{C}$  Unless otherwise noted)

Parameter	Symbol	Typical	Unit
Drain-Source Voltage	$V_{DSS}$	-20	V
Gate –Source Voltage	$V_{GSS}$	$\pm 12$	V
Continuous Drain Current( $T_J=150^{\circ}\text{C}$ )	$I_D$	-0.45	A
	$T_A=25^{\circ}\text{C}$		
Pulsed Drain Current	$I_{DM}$	-1.0	A
Continuous Source Current(Diode Conduction)	$I_S$	-0.3	A
Power Dissipation	$P_D$	0.15	W
	$T_A=25^{\circ}\text{C}$		
Operating Junction Temperature	$T_J$	-55/150	$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-55/150	$^{\circ}\text{C}$



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### ELECTRICAL CHARACTERISTICS

(TA=25°C Unless otherwise noted)

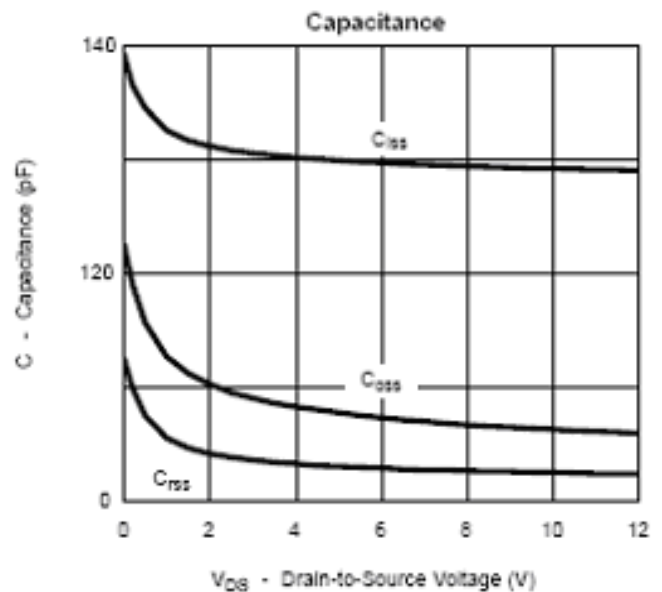
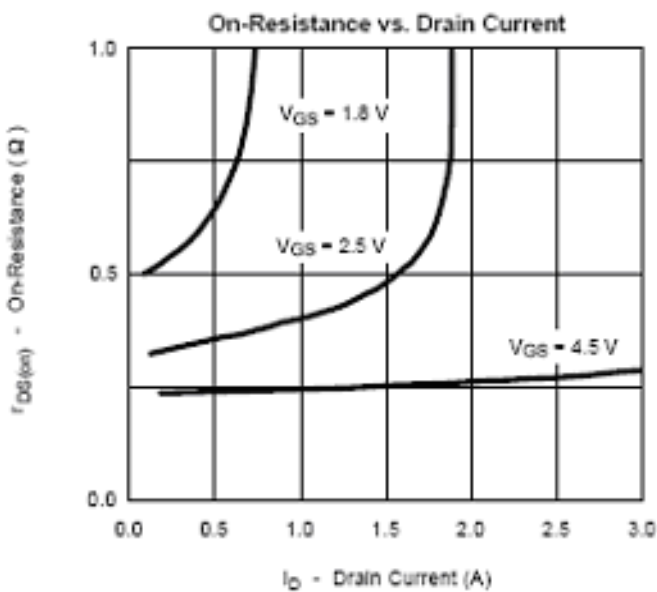
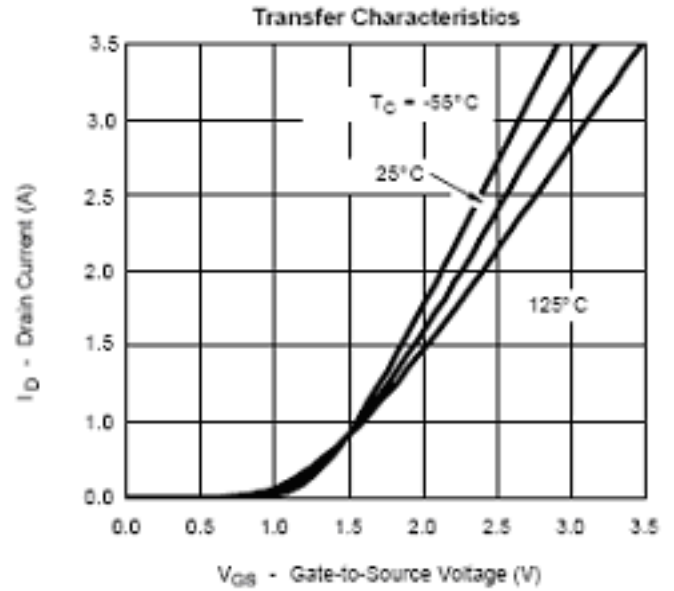
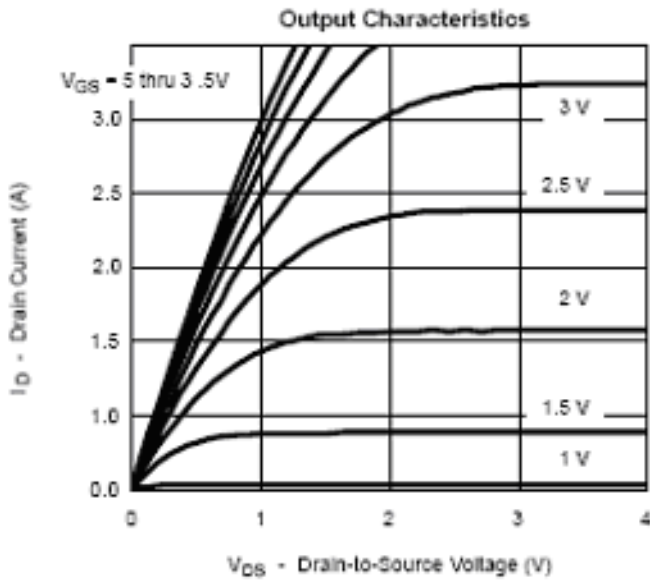
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.35		-1.0	V
Gate Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 12V$			$\pm 30$	$\mu A$
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-20V, V_{GS}=0V$			-1	$\mu A$
		$V_{DS}=-20V, V_{GS}=0V$ $T_J=55^\circ C$			-5	
On-State Drain Current	$I_{D(on)}$	$V_{DS}\leq -4.5V, V_{GS}=-5V$	-0.7			A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-0.45A$		0.42	0.52	$\Omega$
		$V_{GS}=-2.5V, I_D=-0.35A$		0.58	0.70	
		$V_{GS}=-1.8V, I_D=-0.25A$		0.95	1.5	
Forward Transconductance	$g_{fs}$	$V_{DS}=-10V, I_D=-0.25A$		0.4		S
Diode Forward Voltage	$V_{SD}$	$I_S=-0.15A, V_{GS}=0V$		-0.8	-1.2	V
<b>Dynamic</b>						
Total Gate Charge	$Q_g$	$V_{DS}=-10V, V_{GS}=-4.5V, I_D=-0.6A$		1.5	2.0	nC
Gate-Source Charge	$Q_{gs}$			0.3		
Gate-Drain Charge	$Q_{gd}$			0.35		
Turn-On Time	$t_{d(on)}$	$V_{DD}=-10V, R_L=10\Omega, I_D=-0.4A$ $V_{GEN}=-4.5V, R_G=6\Omega$		5	10	ns
	$t_r$			15	25	
Turn-Off Time	$t_{d(off)}$			8	15	
	$t_f$			1.4	1.8	



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### TYPICAL CHARACTERISTICS

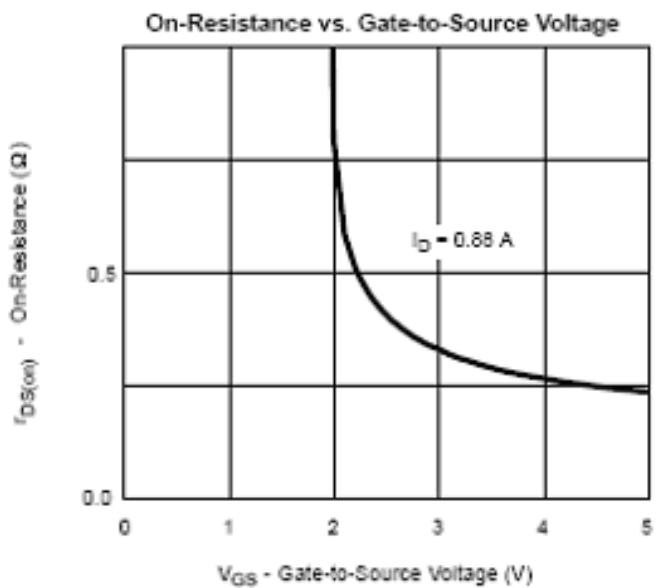
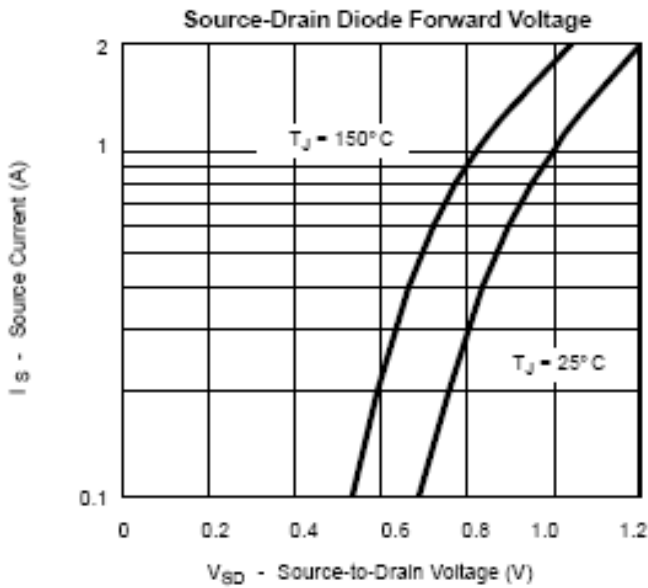
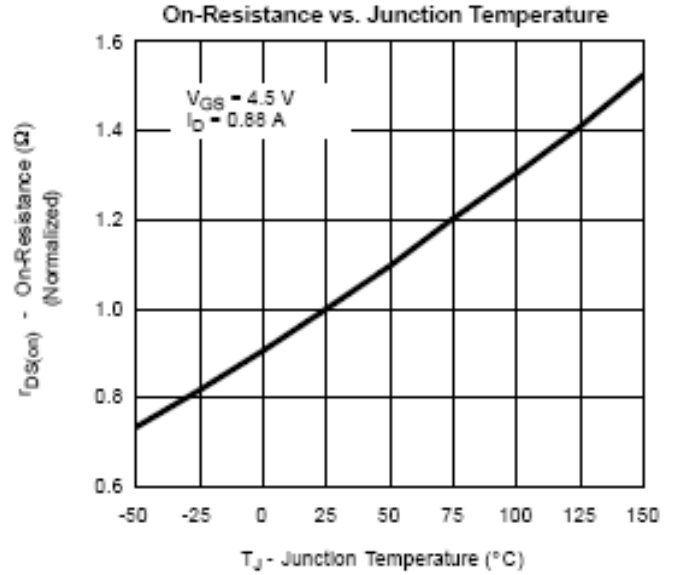
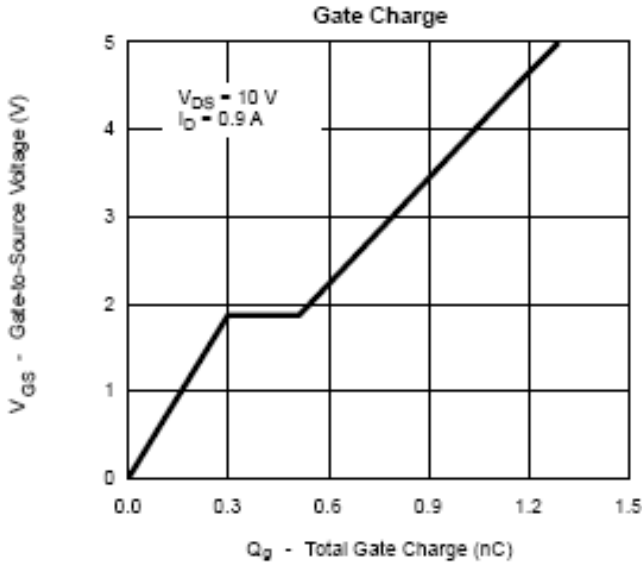




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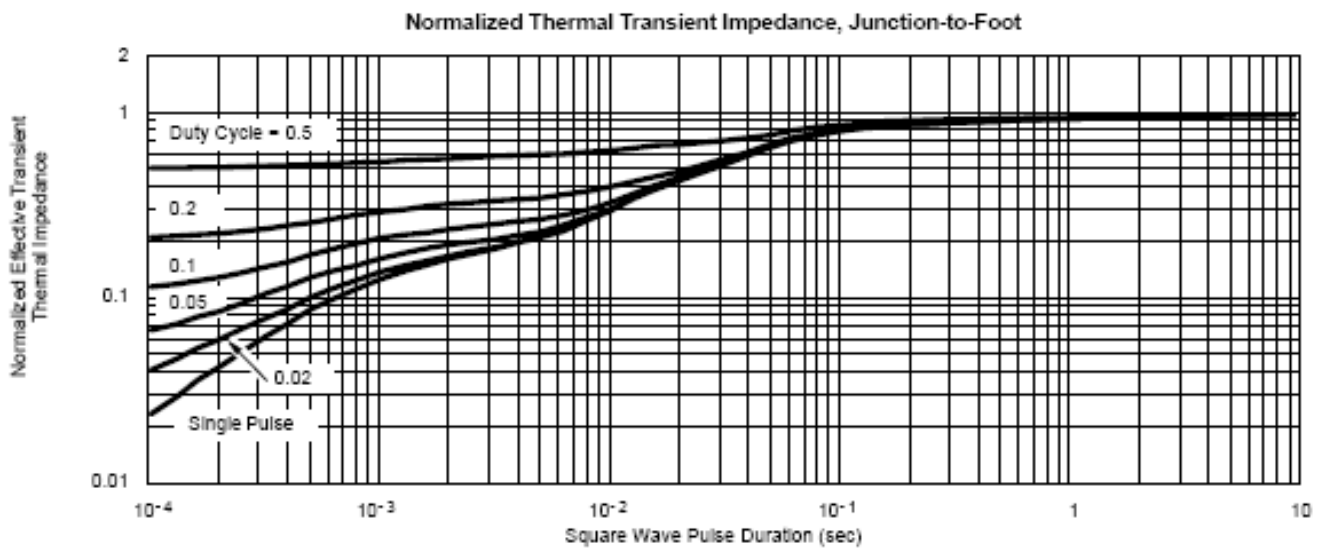
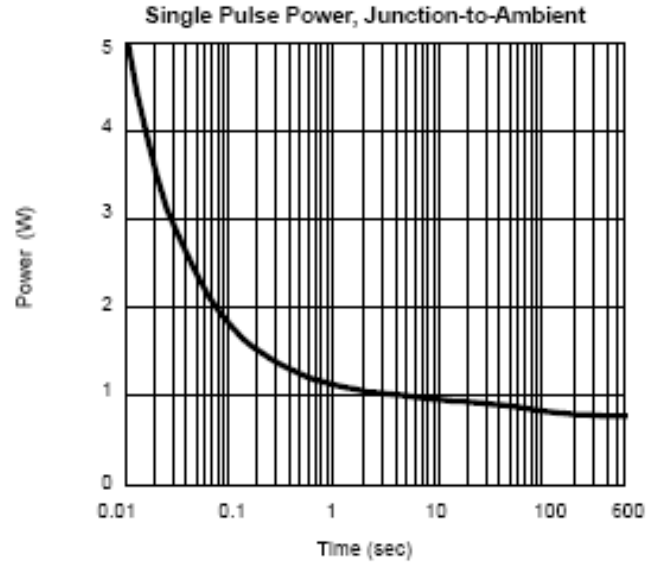
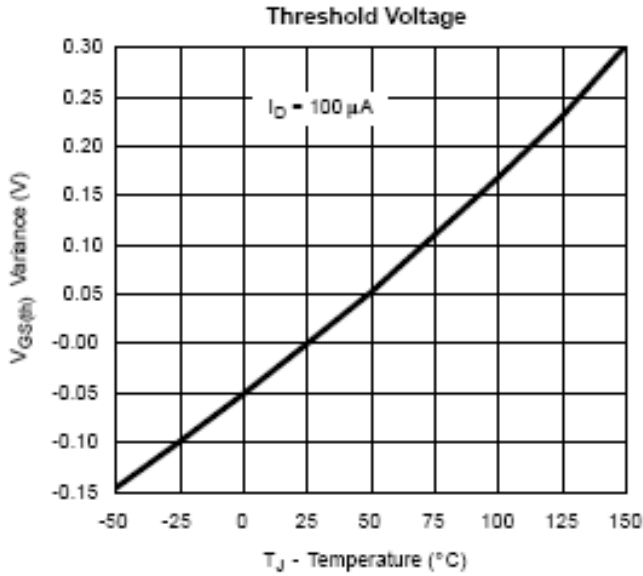




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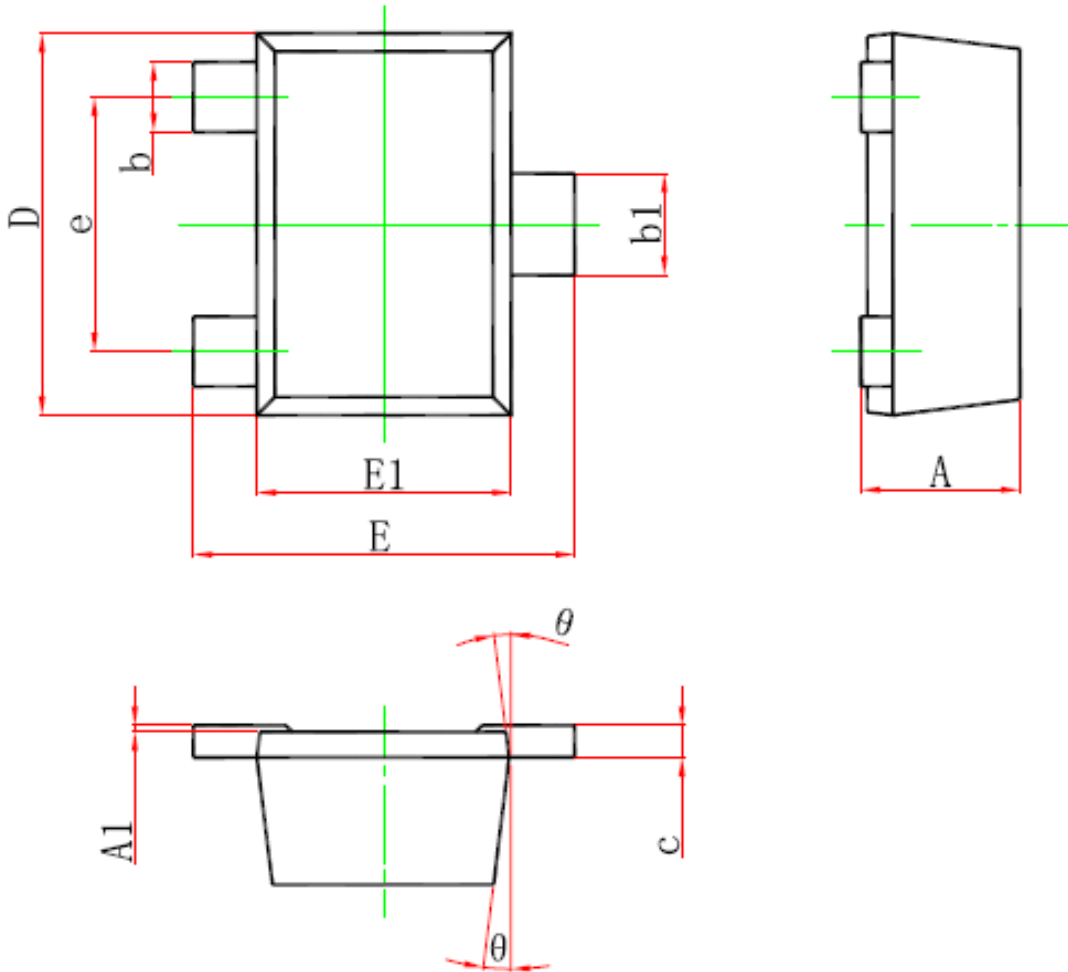




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### SOT-723 PACKAGE OUTLINE



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A		0.500		0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c		0.150		0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	



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