

## GENERAL FEATURES

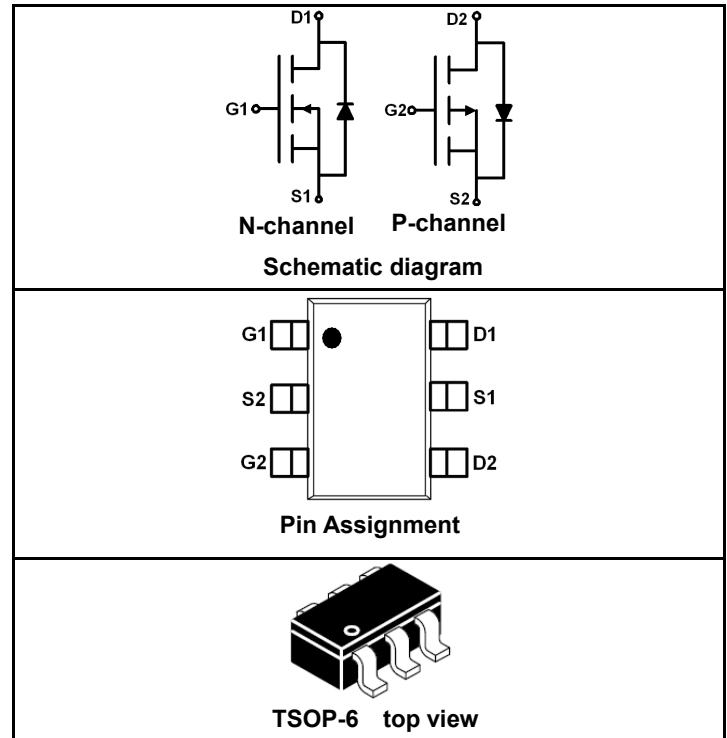
- **N-Channel**

$V_{DS} = 20V, I_D = 2.4A$   
 $R_{DS(ON)} < 125m\Omega @ V_{GS}=4.5V$   
 $R_{DS(ON)} < 200m\Omega @ V_{GS}=2.5V$

- **P-Channel**

$V_{DS} = -20V, I_D = -2.8A$   
 $R_{DS(ON)} < 100m\Omega @ V_{GS}=-4.5V$   
 $R_{DS(ON)} < 150m\Omega @ V_{GS}=-2.5V$

- High Power and current handling capability
- Lead free product is acquired
- Surface Mount Package



## PACKAGE MARKING AND ORDERING INFORMATION

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
2701	SSF2701	TSOP-6	—	—	—

## ABSOLUTE MAXIMUM RATINGS(TA=25°C unless otherwise noted)

Parameter		Symbol	N-Channel	P-Channel	Unit
Drain-Source Voltage		$V_{DS}$	20	-20	V
Gate-Source Voltage		$V_{GS}$	±12	±12	V
Continuous Drain Current	$T_A=25^\circ C$	$I_D$	2.4	-2.8	A
	$T_A=70^\circ C$		1.7	-2	
Pulsed Drain Current (Note 1)		$I_{DM}$	8	-10	A
Maximum Power Dissipation	$T_A=25^\circ C$	$P_D$	1.15	1.15	W
	$T_A=70^\circ C$		0.6	0.6	
Operating Junction and Storage Temperature Range		$T_J, T_{STG}$	-55 To 150	-55 To 150	°C

## THERMAL CHARACTERISTICS

Thermal Resistance, Junction-to-Ambient (Note2)	$R_{\theta JA}$	N-Ch	87	°C/W
		P-Ch	87	

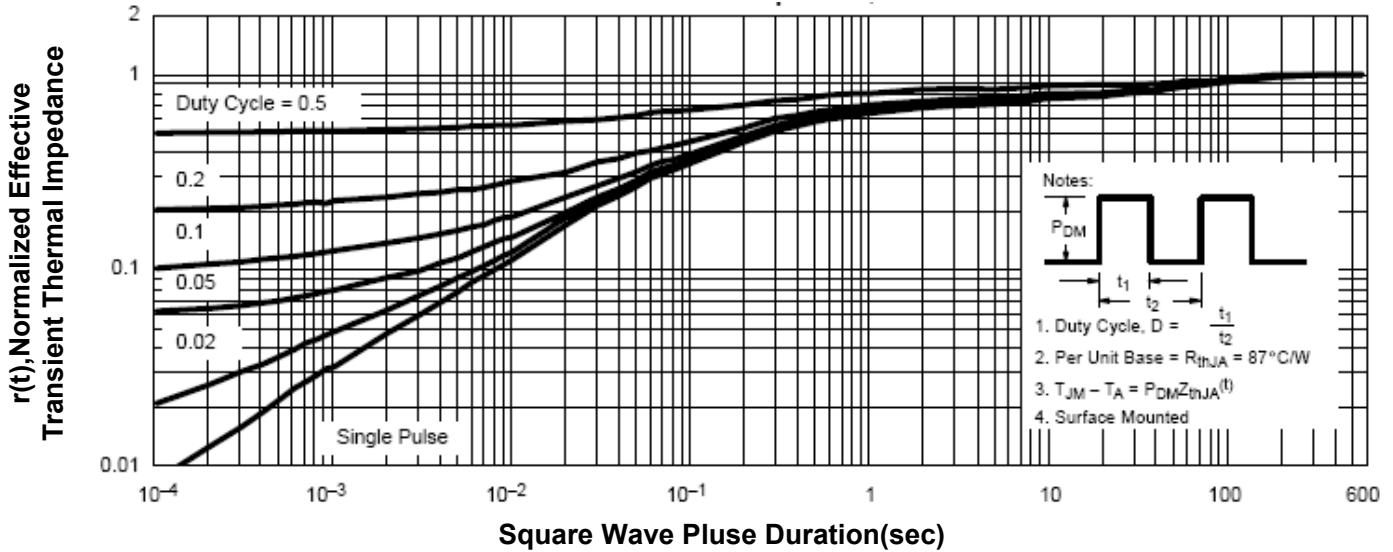
## ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit	
<b>OFF CHARACTERISTICS</b>							
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	N-Ch	20		V	
		V <sub>GS</sub> =0V, I <sub>D</sub> =-250μA	P-Ch	-20			
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =20V, V <sub>GS</sub> =0V	N-Ch		1	μA	
		V <sub>DS</sub> =-20V, V <sub>GS</sub> =0V	P-Ch		-1		
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±12V, V <sub>DS</sub> =0V	N-Ch		±100	nA	
			P-Ch		±100		
<b>ON CHARACTERISTICS (Note 3)</b>							
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	N-Ch	0.6		1	V
		V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250μA	P-Ch	-0.5		-1	
Drain-Source On-State Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =4.5V, I <sub>D</sub> =2.4A	N-Ch		100	125	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-2.8A	P-Ch		80	100	
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =1.8A	N-Ch		160	200	
		V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-2A	P-Ch		110	150	
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =2.4A	N-Ch		5		S
		V <sub>DS</sub> =-5V, I <sub>D</sub> =-2.8A	P-Ch		9		
<b>SWITCHING CHARACTERISTICS (Note 4)</b>							
Turn-on Delay Time	t <sub>d(on)</sub>	N-Ch V <sub>DD</sub> =10V, R <sub>L</sub> =10Ω V <sub>GEN</sub> =4.5V, R <sub>GEN</sub> =6Ω  P-Ch V <sub>DD</sub> =-10V, R <sub>L</sub> =10Ω V <sub>GEN</sub> =-4.5V, R <sub>GEN</sub> =6Ω	N-Ch		10		nS
			P-Ch		12		
Turn-on Rise Time	t <sub>r</sub>		N-Ch		28		nS
			P-Ch		35		
Turn-Off Delay Time	t <sub>d(off)</sub>		N-Ch		16		nS
			P-Ch		19		
Turn-Off Fall Time	t <sub>f</sub>		N-Ch		8		nS
			P-Ch		22		
Total Gate Charge	Q <sub>g</sub>	N-Ch V <sub>DS</sub> =10V, I <sub>D</sub> =2.4A, V <sub>GS</sub> =4.5V  P-Ch V <sub>DS</sub> =-10V, I <sub>D</sub> =-2.8A, V <sub>GS</sub> =-4.5V	N-Ch		3.8		nC
			P-Ch		8		
Gate-Source Charge	Q <sub>gs</sub>		N-Ch		0.9		nC
			P-Ch		1.1		
Gate-Drain Charge	Q <sub>gd</sub>		N-Ch		0.8		nC
			P-Ch		2.6		
<b>DRAIN-SOURCE DIODE CHARACTERISTICS</b>							
Diode Forward Voltage (Note 3)	V <sub>SD</sub>		V <sub>GS</sub> =0V, I <sub>S</sub> =1A	N-Ch		0.8	1.1
		V <sub>GS</sub> =0V, I <sub>S</sub> =-1A	P-Ch		-0.8	-1.1	V

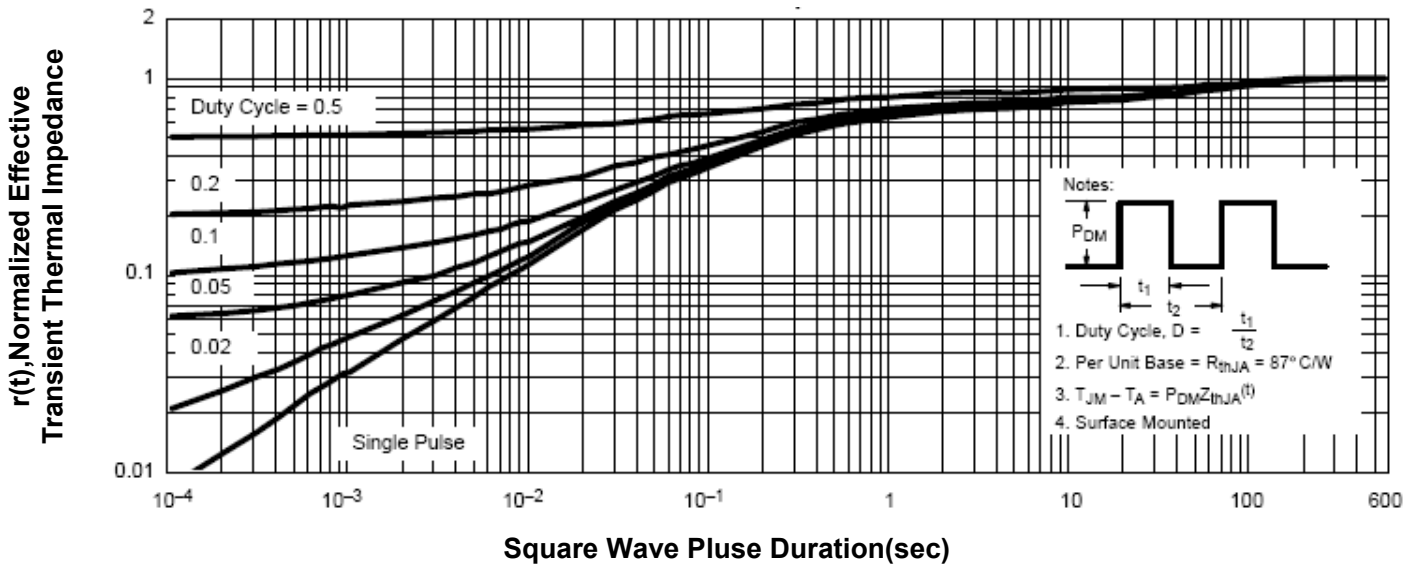
## NOTES:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board,  $t \leq 10$  sec.
3. Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .
4. Guaranteed by design, not subject to production testing.

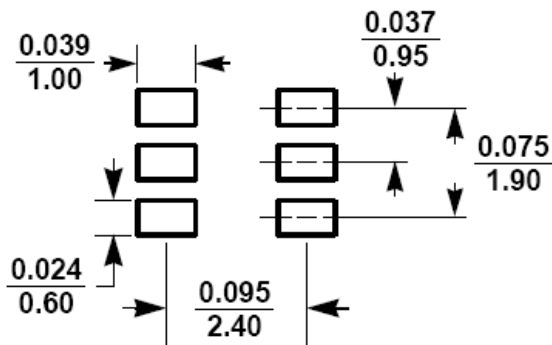
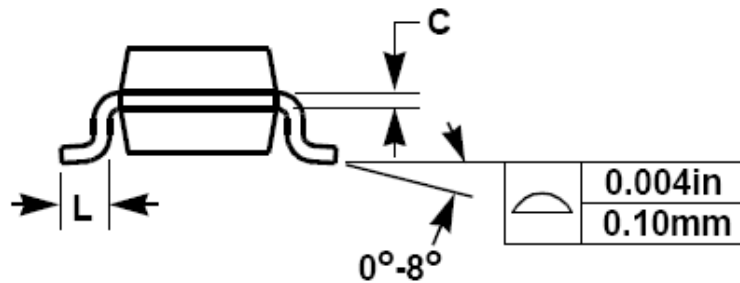
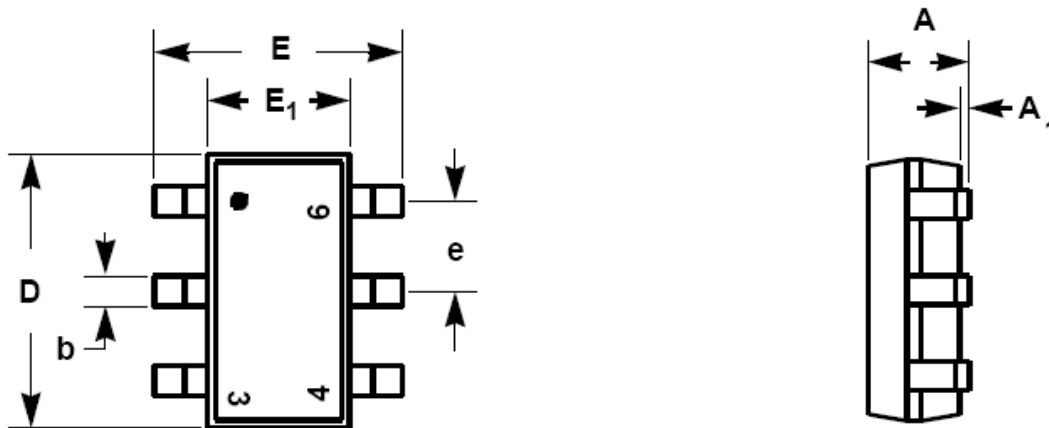
## N-Channel THERMAL CHARACTERISTICS



## P-Channel THERMAL CHARACTERISTICS



## TSOP-6 PACKAGE INFORMATION



SYMBOL	Millimeters	
	MIN	MAX
A	0.90	1.10
A1	0.10	
b	0.30	0.50
c	0.08	0.20
D	2.70	3.10
E	2.60	3.00
E1	1.40	1.80
e	0.95 BSC	
L	0.35	0.55

### NOTES:

1. Dimensions are inclusive of plating
2. Package body sizes exclude mold flash and gate burrs. Mold flash at the non-lead sides should be less than 6 mils.
3. Dimension L is measured in gauge plane.
4. Controlling dimension is millimeter, converted inch dimensions are not necessarily exact.

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