

### Features

- -20V, -2.3A,  $R_{DS(ON)} = 100m\Omega$  (typ) @  $V_{GS} = 4.5V$ .
- $R_{DS(ON)} = 125m\Omega$  (typ) @  $V_{GS} = 2.5V$ .
- SOT-323 package.

### Applications

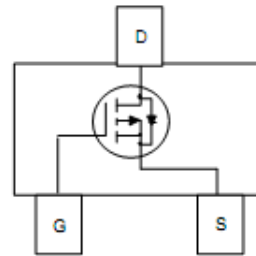
- Battery protection
- Load switch
- Power management

### Ordering Information

Part Number	Qty per Reel	Reel Size
TPNTS4101PT1G	3000	7"



SOT-323



### Absolute Maximum Ratings ( $T_A = 25^\circ C$ unless otherwise specified)

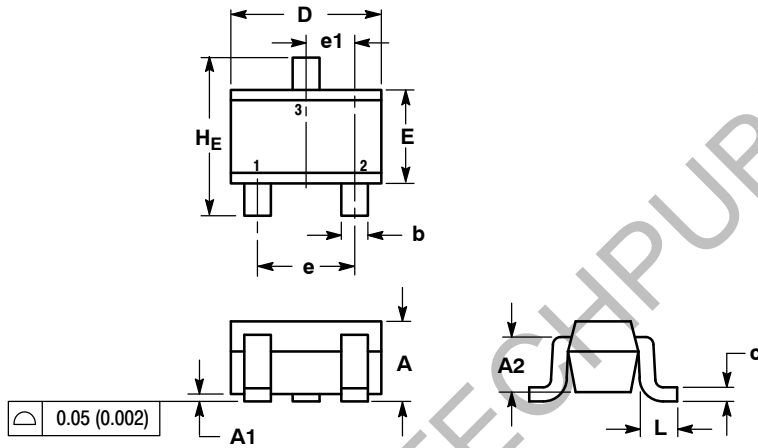
Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	-20	V
Gate-Source Voltage	$V_{GS}$	$\pm 10$	
Continuous Drain Current	$I_D$	-2.3	A
Pulsed Drain Current ( $t_p = 10\mu s$ )	$I_{DM}$	-5.0	
Power Dissipation	$P_D$	0.29	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	431	$^\circ C/W$
Junction Temperature	$T_J$	125	$^\circ C$
Storage Temperature	$T_{stg}$	-50 ~ +150	

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>OFF CHARACTERISSTICS</b>						
Drain-Source Breakdown Voltage	$V_{DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Gate-Source Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 8V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -20V, V_{GS} = 0V$			-1.0	$\mu A$
<b>OFF CHARACTERISSTICS</b>						
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.45	-0.7	-1.0	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -2.3A$			100	m $\Omega$
		$V_{GS} = -2.5V, I_D = -1A$			125	
<b>CHARGES AND CAPACITANCES</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = -8.0V, V_{GS} = 0V, f = 1MHz$		640		pF
Output Capacitance	$C_{oss}$			120		
Reverse Transfer Capacitance	$C_{rss}$			82		
<b>SWITCHING CHARACTERISSTICS</b>						
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = -4.5V, V_{DD} = -4.0V,$ $I_D = -1.0A, R_G = 6.2\Omega$		6.2		ns
Rise Time	$t_r$			15		
Turn-Off Delay Time	$t_{d(off)}$			26		
Fall Time	$t_f$			18		

PACKAGE DIMENSIONS

**SC-70 (SOT-323)**  
CASE 419-04  
ISSUE N

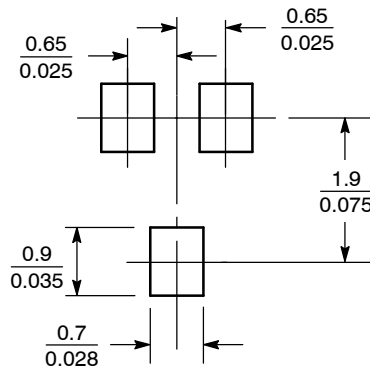


- NOTES:  
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.  
2. CONTROLLING DIMENSION: INCH.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.032	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2	0.70 REF			0.028 REF		
b	0.30	0.35	0.40	0.012	0.014	0.016
c	0.10	0.18	0.25	0.004	0.007	0.010
D	1.80	2.10	2.20	0.071	0.083	0.087
E	1.15	1.24	1.35	0.045	0.049	0.053
e	1.20	1.30	1.40	0.047	0.051	0.055
e1	0.65 BSC			0.026 BSC		
L	0.20	0.38	0.56	0.008	0.015	0.022
HE	2.00	2.10	2.40	0.079	0.083	0.095

- STYLE 8:  
PIN 1. GATE  
2. SOURCE  
3. DRAIN

**SOLDERING FOOTPRINT\***



SCALE 10:1 ( $\frac{\text{mm}}{\text{inches}}$ )

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