

**Product Summary**

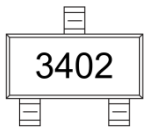
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
30V	34mΩ@10V	4A
	37mΩ@4.5V	
	45mΩ@2.5V	

**Feature**

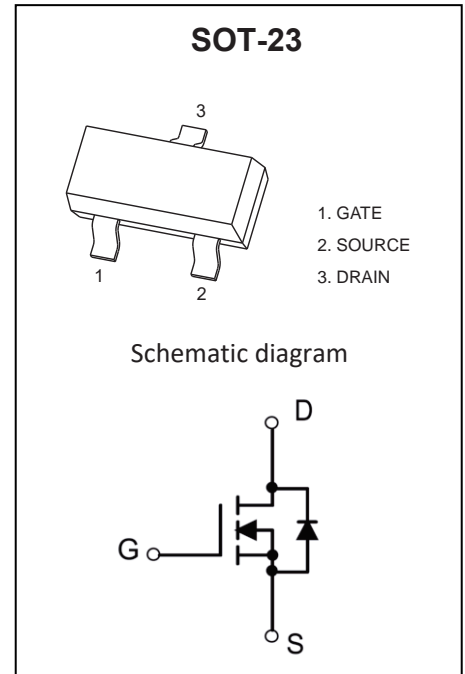
- TrenchFET Power MOSFET
- Excellent  $R_{DS(on)}$  and Low Gate Charge

**Application**

- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

**MARKING:**


Old version marking: A29T


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

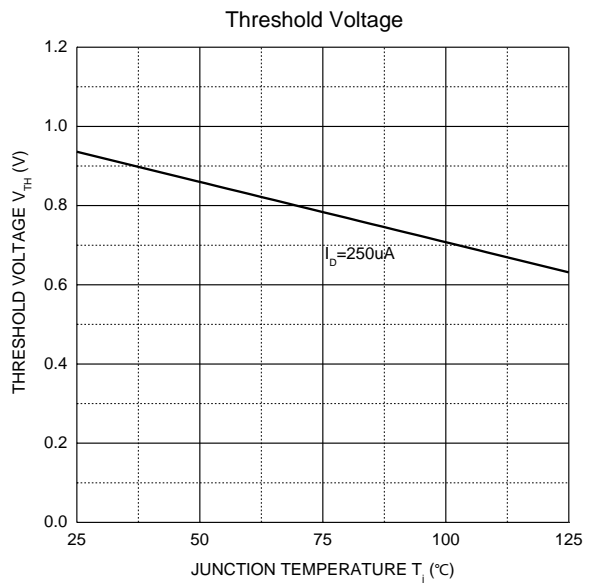
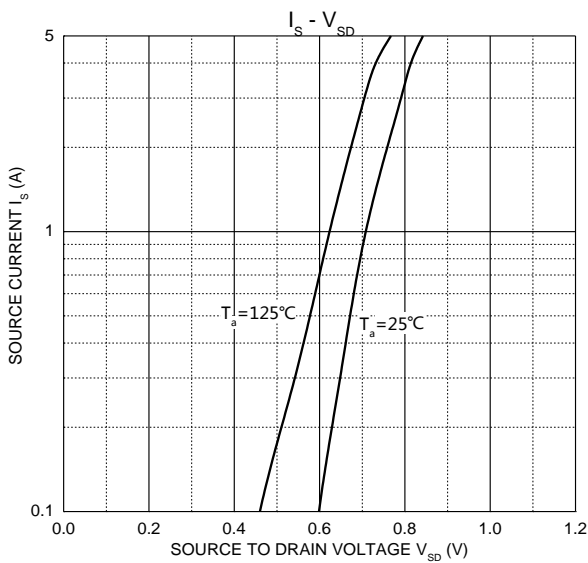
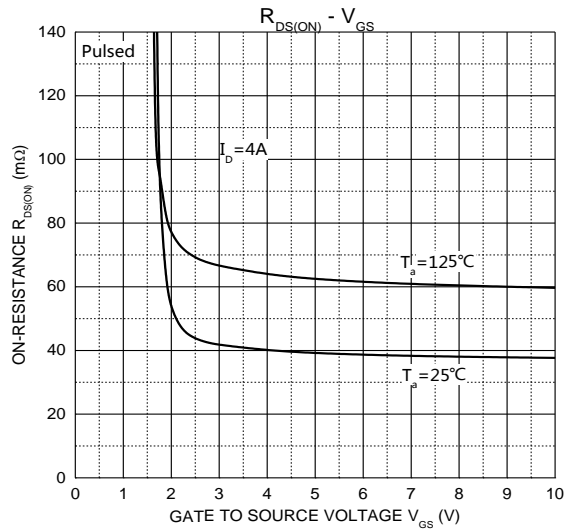
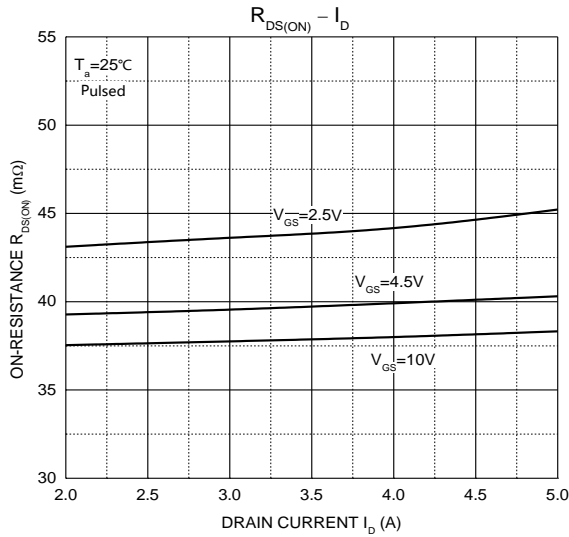
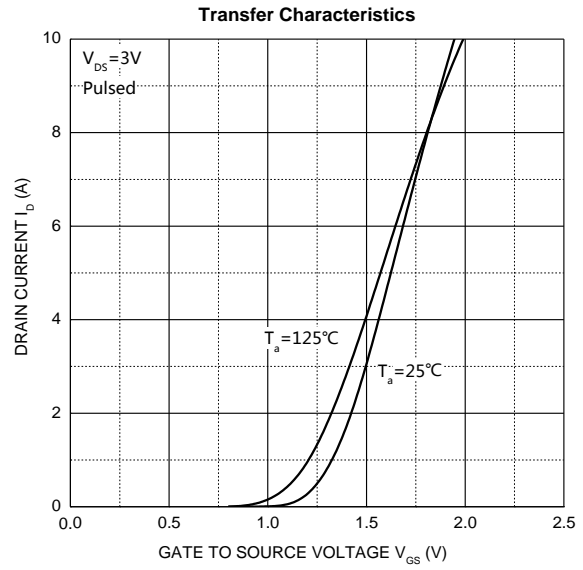
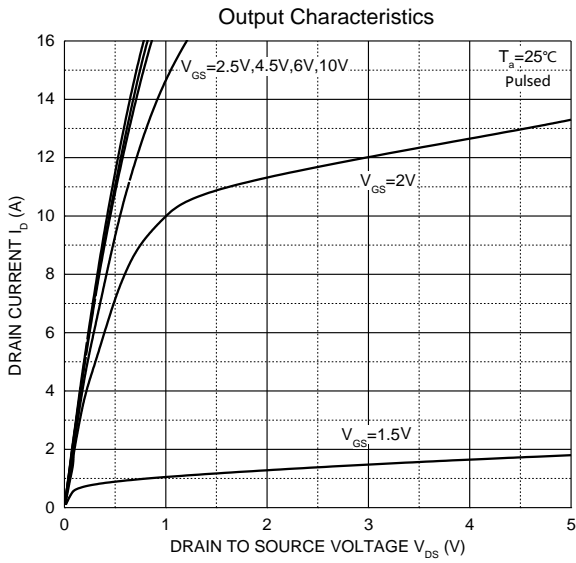
Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	±12	V
Continuous Drain Current	$I_D$	4	A
Pulsed Drain Current <sup>(1)</sup>	$I_{DM}$	15	A
Power Dissipation	$P_D$	1.5	W
Thermal Resistance from Junction to Ambient <sup>(2)</sup>	$R_{\theta JA}$	83.3	$^{\circ}\text{C/W}$
Junction Temperature	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55~ +150	$^{\circ}\text{C}$

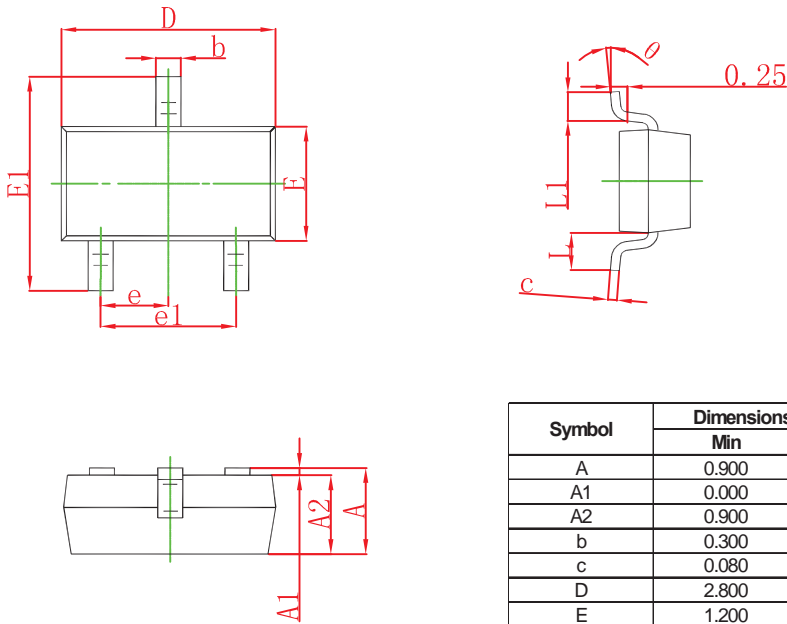
**MOSFET ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$  unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>STATIC CHARACTERISTICS</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 30V, V_{GS} = 0V$			1	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$			$\pm 100$	nA
Gate threshold voltage <sup>(3)</sup>	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.5	0.95	1.5	V
Drain-source on-resistance <sup>(3)</sup>	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 4A$		34	52	m $\Omega$
		$V_{GS} = 4.5V, I_D = 3A$		37	65	
		$V_{GS} = 2.5V, I_D = 2A$		45	85	
Forward transconductance <sup>(3)</sup>	$g_{FS}$	$V_{DS} = 5V, I_D = 3.6A$		13		S
<b>DYNAMIC CHARACTERISTICS<sup>(4)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$		389		pF
Output Capacitance	$C_{oss}$			54		
Reverse Transfer Capacitance	$C_{rss}$			40		
Gate resistance	$R_g$	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		3.5		$\Omega$
<b>SWITCHING CHARACTERISTICS<sup>(4)</sup></b>						
Turn-on delay time	$t_{d(on)}$	$V_{GS} = 10V, V_{DS} = 15V,$ $R_L = 3.75\Omega, R_{GEN} = 6\Omega$		3.5		ns
Turn-on rise time	$t_r$			1.2		
Turn-off delay time	$t_{d(off)}$			22		
Turn-off fall time	$t_f$			2.2		
Total gate charge	$Q_g$	$V_{DS} = 15V, V_{GS} = 4.5V, I_D = 4A$		4.4		nC
Gate-source charge	$Q_{gs}$			0.7		
Gate-drain charge	$Q_{gd}$			1.3		
<b>SOURCE-DRAIN DIODE CHARACTERISTICS</b>						
Body Diode Voltage <sup>(3)</sup>	$V_{SD}$	$I_S = 1A, V_{GS} = 0V$			1	V
Continuous Source-Drain Diode Current	$I_S$	$T_C = 25^\circ\text{C}$			1.5	A
Body diode reverse recovery time	$t_r$	$I_F = 4A, di/dt = 100A/\mu s$		1.3		ns
Body diode reverse recovery charge	$Q_{rr}$				6.2	

**Notes:**

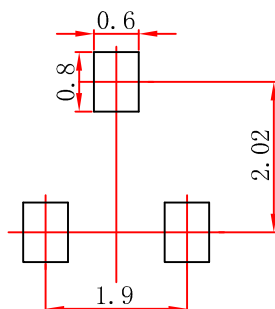
1. Repetitive rating : Pulse width limited by junction temperature.
2. Surface mounted on FR4 board ,  $t_s \leq 10s$ .
3. Pulse Test : Pulse Width  $\leq 80\mu s$ , Duty Cycle  $\leq 0.5\%$ .
4. Guaranteed by design, not subject to producing.

**Typical Electrical and Thermal Characteristics**




Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

### SOT-23 Suggested Pad Layout



**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.