

Features

- $V_{DS} = -20V, I_D = -0.55A$
 $R_{DS(ON)} < 590m\Omega @ V_{GS} = -4.5V$
 $R_{DS(ON)} < 900m\Omega @ V_{GS} = -2.5V$
- ESD Protection

Application

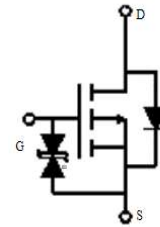
- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

Package and Pin Configuration



SOT-523

Circuit diagram



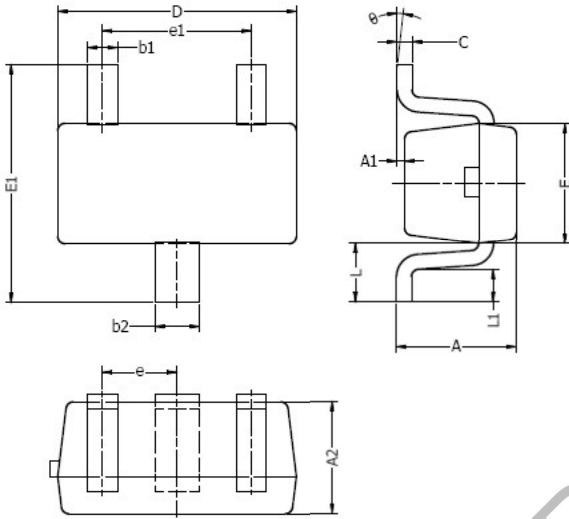
Absolute Maximum Ratings ($T_A = 25^\circ C$ unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|--|-----------------|-----------|--------------|
| Drain-Source Voltage | V_{DS} | -20 | V |
| Gate-Source Voltage | V_{GS} | ± 10 | V |
| Continuous Drain Current | I_D | -0.55 | A |
| Pulsed Drain Current ($t=300\mu s$) ⁽¹⁾ | I_{DM} | -1.4 | A |
| Power Dissipation ⁽²⁾ | P_D | 280 | mW |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 452 | $^\circ C/W$ |
| Junction Temperature | T_J | 150 | $^\circ C$ |
| Storage Temperature | T_{STG} | -55~ +150 | $^\circ C$ |

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

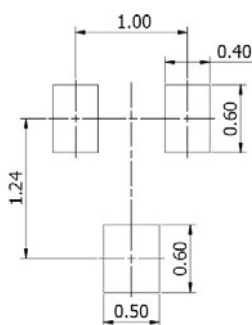
| Parameter | Symbol | Test Condition | Min | Type | Max | Unit |
|--|---------------|--|------|-------|----------|------------|
| Static Characteristics | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)DSS}$ | $V_{GS} = 0V, I_D = -250\mu A$ | -20 | | | V |
| Zero gate voltage drain current | I_{DSS} | $V_{DS} = -20V, V_{GS} = 0V$ | | | -1 | μA |
| Gate-body leakage current | I_{GSS} | $V_{GS} = \pm 10V, V_{DS} = 0V$ | | | ± 10 | μA |
| Gate threshold voltage ⁽³⁾ | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = -250\mu A$ | -0.5 | -0.75 | -1.1 | V |
| Drain-source on-resistance ⁽³⁾ | $R_{DS(on)}$ | $V_{GS} = -4.5V,$ $I_{DS} = -550mA$ | | | 590 | m Ω |
| | | $V_{GS} = -2.5V, I_{DS} = -450mA$ | | | 900 | |
| Forward transconductance | g_{FS} | $V_{DS} = -5V, I_D = 500mA$ | | 1 | | S |
| Dynamic characteristics⁽⁴⁾ | | | | | | |
| Input Capacitance | C_{iss} | $V_{GS} = 0V,$ $V_{DS} = -10V,$ Freq. = 1MHz | | | 60 | pF |
| Output Capacitance | C_{oss} | | | | 6 | |
| Reverse Transfer Capacitance | C_{rss} | | | | 5 | |
| Switching Characteristics⁽⁴⁾ | | | | | | |
| Turn-on delay time | $t_{d(on)}$ | $V_{GS} = -4.5V, V_{DS} = -10V,$ $I_D = -1A, R_{GEN} = 3\Omega$ | | 0.45 | | us |
| Turn-on rise time <small>www.techpublic.com.tw</small> | t_r | | | 0.04 | | |
| Turn-off delay time | $t_{d(off)}$ | | | 0.035 | | |
| Turn-off fall time | t_f | | | 1.1 | | |
| Source-Drain Diode characteristics | | | | | | |
| Diode Forward voltage ⁽³⁾ | V_{DS} | $I_S = 0.15A, V_{GS} = 0V$ | | | -1.2 | V |

SOT523 Package Outline Drawing



| DIM | MILLIMETERS | | INCHES | |
|----------|-------------|------|------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.70 | 0.90 | 0.028 | 0.035 |
| A1 | 0.00 | 0.10 | 0.000 | 0.004 |
| A2 | 0.70 | 0.80 | 0.028 | 0.031 |
| b1 | 0.15 | 0.25 | 0.006 | 0.010 |
| b2 | 0.25 | 0.35 | 0.010 | 0.014 |
| c | 0.10 | 0.20 | 0.004 | 0.008 |
| D | 1.50 | 1.70 | 0.059 | 0.067 |
| E | 0.70 | 0.90 | 0.028 | 0.035 |
| E1 | 1.45 | 1.75 | 0.057 | 0.069 |
| e | 0.50 TYP. | | 0.020 TYP. | |
| e1 | 0.90 | 1.10 | 0.035 | 0.043 |
| L | 0.40 REF. | | 0.016 REF. | |
| L1 | 0.10 | 0.30 | 0.004 | 0.012 |
| θ | 0° | 8° | 0° | 8° |

Suggested Land Pattern



NOTES:

1. Above package outline conforms to JEITA EAIJ ED-7500A SC-75A.
2. Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [MOSFET](#) category:

Click to view products by [TECH PUBLIC](#) manufacturer:

Other Similar products are found below :

[614233C](#) [648584F](#) [NTNS3A92PZT5G](#) [IRFD120](#) [IRFF430](#) [JANTX2N5237](#) [2N7000](#) [2SK2464-TL-E](#) [FCA20N60_F109](#) [FDZ595PZ](#) [AOD464](#)
[2SK2267\(Q\)](#) [2SK2545\(Q,T\)](#) [405094E](#) [423220D](#) [MIC4420CM-TR](#) [VN1206L](#) [614234A](#) [715780A](#) [SSM6J414TU,LF\(T](#) [751625C](#)
[IPP60R600P6XKSA1](#) [RJK60S5DPK-M0#T0](#) [BSC884N03MS G](#) [BSF024N03LT3 G](#) [PSMN4R2-30MLD](#) [TK31J60W5,S1VQ\(O](#)
[2SK2614\(TE16L1,Q\)](#) [DMN1017UCP3-7](#) [EFC2J004NUZTDG](#) [FCAB21350L1](#) [P85W28HP2F-7071](#) [DMN1053UCP4-7](#) [NTE2384](#) [NTE2969](#)
[NTE6400A](#) [DMN2080UCB4-7](#) [DMN61D9UWQ-13](#) [US6M2GTR](#) [DMN31D5UDJ-7](#) [SSM6P54TU,LF](#) [DMP22D4UFO-7B](#)
[IPS60R3K4CEAKMA1](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#) [STF5N65M6](#) [STU5N65M6](#) [C3M0021120D](#) [DMN13M9UCA6-7](#)
[BSS340NWH6327XTSA1](#)