

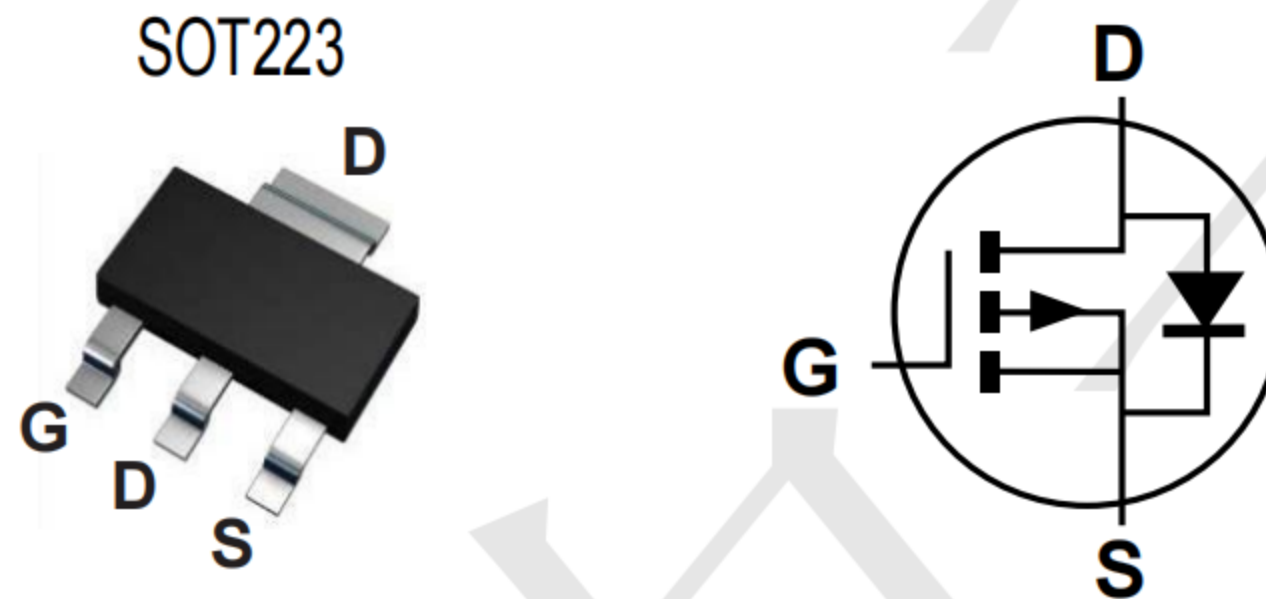
Features

- $V_{DS} = -60V, I_D = -3A$
 $R_{DS(ON)} 95m\ \Omega @ V_{GS} = -10V (Typ)$

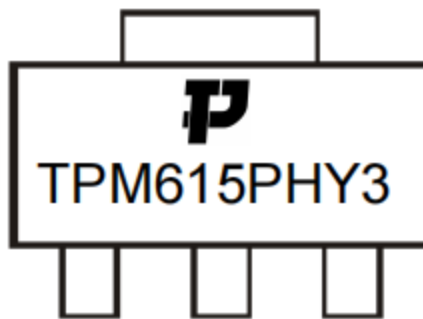
Application

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

Package and Pin Configuration



Marking



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

| Characteristic | Symbol | Value | Unit |
|--|-----------|---------------------|------|
| Drain-Source voltage | V_{DSS} | -60 | V |
| Gate-Source voltage | V_{GS} | ± 20 | V |
| Continuous Drain current (Note 7) $V_{GS} = -10V$ | I_D | $T_A = +25^\circ C$ | -3 |
| | | $T_A = +70^\circ C$ | -2.4 |
| Maximum Body Diode Continuous Current | I_S | -2 | A |
| Pulsed Drain Current (10 μs pulse, duty cycle = 1%) | I_{DM} | -15 | A |
| Single Pulsed Avalanche Current (Note 8) | I_{AS} | -16 | A |
| Single Pulsed Avalanche Energy (Note 8) | E_{AS} | 13 | mJ |

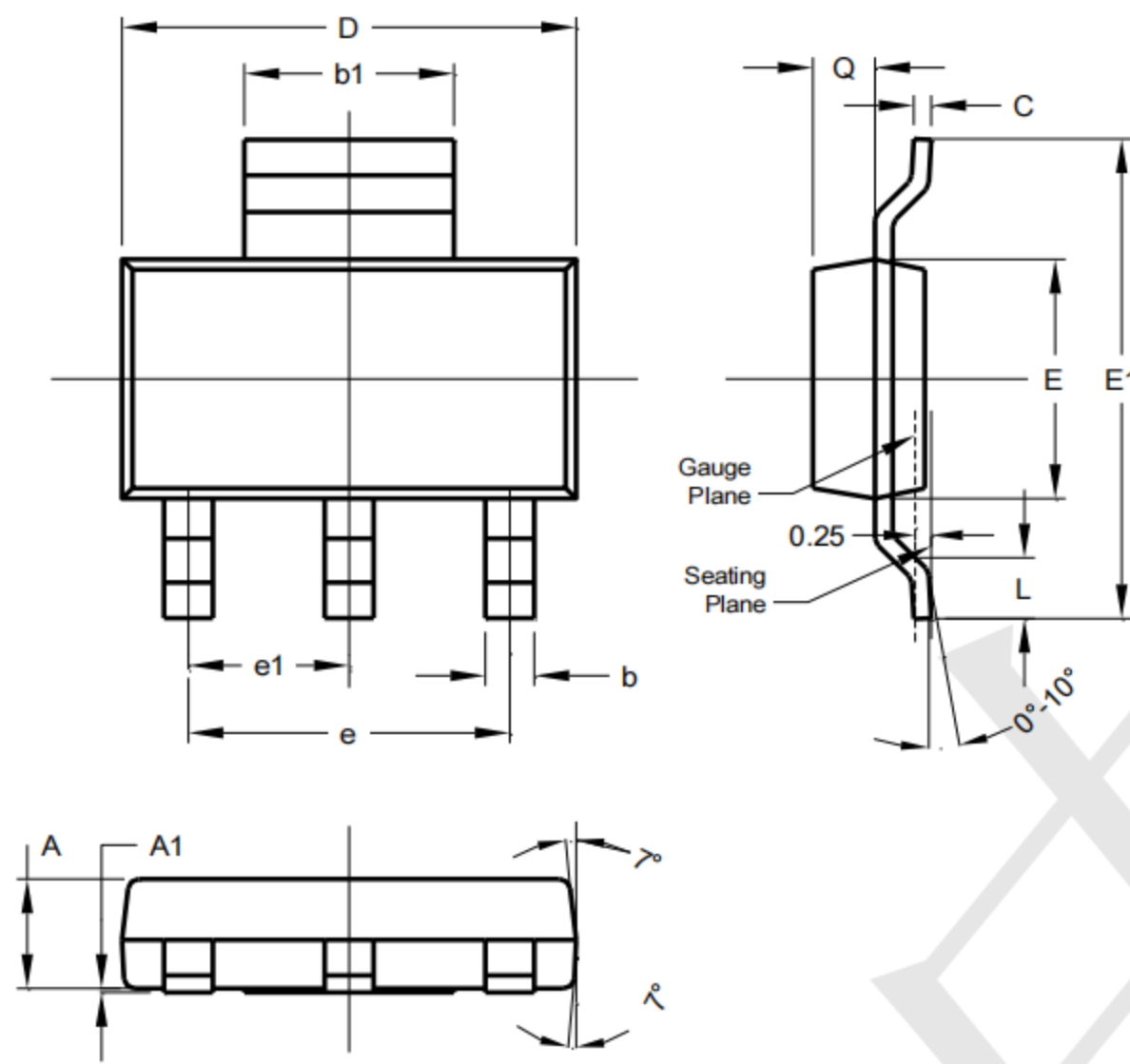
Thermal Characteristic

| Characteristic | Symbol | Value | Units |
|--|-----------------|---------------------|--------------|
| Total Power Dissipation (Note 6) | P_D | $T_A = +25^\circ C$ | 1.2 |
| | | $T_A = +70^\circ C$ | 0.8 |
| Thermal Resistance, Junction to Ambient (Note 6) | $R_{\theta JA}$ | Steady state | 104 |
| | | $t < 10s$ | 51 |
| Total Power Dissipation (Note 7) | P_D | $T_A = +25^\circ C$ | 2.2 |
| | | $T_A = +70^\circ C$ | 1.4 |
| Thermal Resistance, Junction to Ambient (Note 7) | $R_{\theta JA}$ | Steady state | 60 |
| | | $t < 10s$ | 30 |
| Thermal Resistance, Junction to Case (Note 7) | $R_{\theta JC}$ | 7.6 | $^\circ C/W$ |
| Operating and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | $^\circ C$ |

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

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--|--------------|-----|-------|-----------|------------|--|
| OFF CHARACTERISTICS (Note 9) | | | | | | |
| Drain-Source Breakdown Voltage | BV_{DSS} | -60 | - | - | V | $V_{GS} = 0V, I_D = -250\mu A$ |
| Zero Gate Voltage Drain Current | I_{DSS} | - | - | -1 | μA | $V_{DS} = -48V, V_{GS} = 0V$ |
| Gate-Source Leakage | I_{GSS} | - | - | ± 100 | nA | $V_{GS} = \pm 20V, V_{DS} = 0V$ |
| ON CHARACTERISTICS (Note 9) | | | | | | |
| Gate Threshold Voltage | $V_{GS(th)}$ | -2 | -3 | -4 | V | $V_{DS} = V_{GS}, I_D = -250\mu A$ |
| Static Drain-Source On-Resistance | $R_{DS(on)}$ | - | 95 | 130 | m Ω | $V_{GS} = -10V, I_D = -2.2A$ |
| Diode Forward Voltage | V_{SD} | - | -0.75 | -0.95 | V | $V_{GS} = 0V, I_S = -1A$ |
| DYNAMIC CHARACTERISTICS (Note 10) | | | | | | |
| Input Capacitance | C_{iss} | - | 708 | - | pF | $V_{DS} = -30V, V_{GS} = 0V, f = 1MHz$ |
| Output Capacitance | C_{oss} | - | 39 | - | pF | |
| Reverse Transfer Capacitance | C_{rss} | - | 32 | - | pF | |
| Gate Resistance | R_g | - | 17 | 28 | Ω | $V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$ |
| Total Gate Charge ($V_{GS} = -4.5V$) | Q_g | - | 6.2 | - | nC | $V_{DS} = -30V, I_D = -12A$ |
| Total Gate Charge ($V_{GS} = -10V$) | Q_g | - | 14 | - | nC | |
| Gate-Source Charge | Q_{gs} | - | 2.8 | - | nC | |
| Gate-Drain Charge | Q_{gd} | - | 3.1 | - | nC | |
| Turn-On Delay Time | $t_{D(on)}$ | - | 5.2 | - | ns | $V_{DS} = -30V, R_L = 2.5\Omega, V_{GS} = -10V, R_G = 3\Omega$ |
| Turn-On Rise Time | t_r | - | 23 | - | ns | |
| Turn-Off Delay Time | $t_{D(off)}$ | - | 33 | - | ns | |
| Turn-Off Fall Time | t_f | - | 39 | - | ns | |
| Body Diode Reverse Recovery Time | t_{rr} | - | 22 | - | ns | $I_F = -12A, di/dt = 100A/\mu s$ |
| Body Diode Reverse Recovery Charge | Q_{rr} | - | 17 | - | nC | |

SOT223 Package Information



| SOT223 | | | |
|----------------------|-------|------|------|
| Dim | Min | Max | Typ |
| A | 1.55 | 1.65 | 1.60 |
| A1 | 0.010 | 0.15 | 0.05 |
| b1 | 2.90 | 3.10 | 3.00 |
| b2 | 0.60 | 0.80 | 0.70 |
| C | 0.20 | 0.30 | 0.25 |
| D | 6.45 | 6.55 | 6.50 |
| E | 3.45 | 3.55 | 3.50 |
| E1 | 6.90 | 7.10 | 7.00 |
| e | — | — | 4.60 |
| e1 | — | — | 2.30 |
| L | 0.85 | 1.05 | 0.95 |
| Q | 0.84 | 0.94 | 0.89 |
| All Dimensions in mm | | | |

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 :

[IRFD120](#) [JANTX2N5237](#) [2SK2267\(Q\)](#) [BUK455-60A/B](#) [TK100A10N1,S4X\(S](#) [MIC4420CM-TR](#) [VN1206L](#) [NDP4060](#) [SI4482DY](#)
[IRS2092STRPBF-EL](#) [IPS70R2K0CEAKMA1](#) [TK31J60W5,S1VQ\(O](#) [TK31J60W,S1VQ\(O](#) [TK16J60W,S1VQ\(O](#) [2SK2614\(TE16L1,Q\)](#)
[DMN1017UCP3-7](#) [EFC2J004NUZTDG](#) [P85W28HP2F-7071](#) [DMN1053UCP4-7](#) [NTE2384](#) [DMC2700UDMQ-7](#) [DMN2080UCB4-7](#)
[DMN61D9UWQ-13](#) [US6M2GTR](#) [DMN31D5UDJ-7](#) [DMP22D4UFO-7B](#) [IPS60R3K4CEAKMA1](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#)
[STF5N65M6](#) [IRF40H233XTMA1](#) [STU5N65M6](#) [DMN6022SSD-13](#) [DMN13M9UCA6-7](#) [DMTH10H4M6SPS-13](#) [IPS60R360PFD7SAKMA1](#)
[DMN2990UFB-7B](#) [SSM3K35CT,L3F](#) [IPLK60R1K0PFD7ATMA1](#) [2N7002W-G](#) [MCAC30N06Y-TP](#) [IPWS65R035CFD7AXKSA1](#)
[MCQ7328-TP](#) [SSM3J143TU,LXHF](#) [DMN12M3UCA6-7](#) [PJMF280N65E1_T0_00201](#) [PJMF380N65E1_T0_00201](#)
[PJMF280N60E1_T0_00201](#) [PJMF600N65E1_T0_00201](#) [PJMF900N65E1_T0_00201](#)