



Product Summary

| $V_{(BR)DSS}$ | $R_{DS(on)TYP}$ | I_D |
|---------------|-----------------|-------|
| 20V | 30mΩ@4.5V | 3A |
| | 40mΩ@2.5V | |
| | 66mΩ@1.8V | |

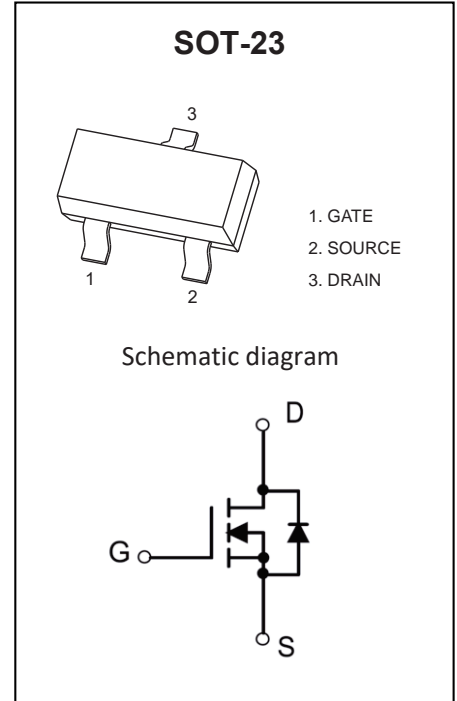
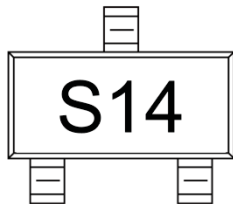
Feature

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

Application

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

MARKING:



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

| Parameter | Symbol | Value | Unit |
|---|-----------------|-----------|----------------------|
| Drain-Source Voltage | V_{DS} | 20 | V |
| Gate-Source Voltage | V_{GS} | ± 8 | V |
| Continuous Drain Current | I_D | 3 | A |
| Pulsed Drain Current ($t=300\mu\text{s}$) | I_{DM} | 12 | A |
| Power Dissipation | P_D | 0.35 | W |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 357 | $^{\circ}\text{C/W}$ |
| Junction Temperature | T_J | 150 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{STG} | -55~ +150 | $^{\circ}\text{C}$ |

MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°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 =250μA | 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} =±8V, V _{DS} = 0V | | | ±0.1 | μA |
| Gate threshold voltage | V _{GS(th)} | V _{DS} =V _{GS} , I _D =250μA | 0.4 | 0.6 | 1.0 | V |
| Drain-source on-resistance ^a | R _{DS(on)} | V _{GS} =4.5V, I _D =3.0A | | 30 | 39 | mΩ |
| | | V _{GS} =2.5V, I _D =2.8A | | 40 | 52 | |
| | | V _{GS} =1.8V, I _D =2.5A | | 66 | 90 | |
| Forward tranconductance ^a | g _{FS} | V _{DS} =5V, I _D =3A | | 10.5 | | S |
| Dynamic characteristics^b | | | | | | |
| Input Capacitance | C _{iss} | V _{DS} =15V, V _{GS} =0V, f=1MHz | | 310 | | pF |
| Output Capacitance | C _{oss} | | | 49 | | |
| Reverse Transfer Capacitance | C _{rss} | | | 35 | | |
| Total Gate Charge (4.5V) | Q _g | V _{DS} =15V , V _{GS} =4.5V , I _D =3A | | 4.6 | | nC |
| Gate-Source Charge | Q _{gs} | | | 0.7 | | |
| Gate-Drain Charge | Q _{gd} | | | 1.5 | | |
| Turn-on delay time | t _{d(on)} | V _{DD} =10V , V _{GS} =4.5V , R _G =3.3Ω I _D =3A | | 1.6 | | ns |
| Turn-on rise time | t _r | | | 42 | | |
| Turn-off delay time | t _{d(off)} | | | 14 | | |
| Turn-off fall time | t _f | | | 7 | | |
| Source-Drain Diode characteristics | | | | | | |
| Diode Forward voltage | V _{DS} | V _{GS} =0V, I _S =1A | | | 1.2 | V |

Notes:

- a. Pulse Test : pulse width ≤300μs, duty cycle ≤2%.
b. These parameters have no way to verify.

Typical Electrical and Thermal Characteristics

Typical Characteristics

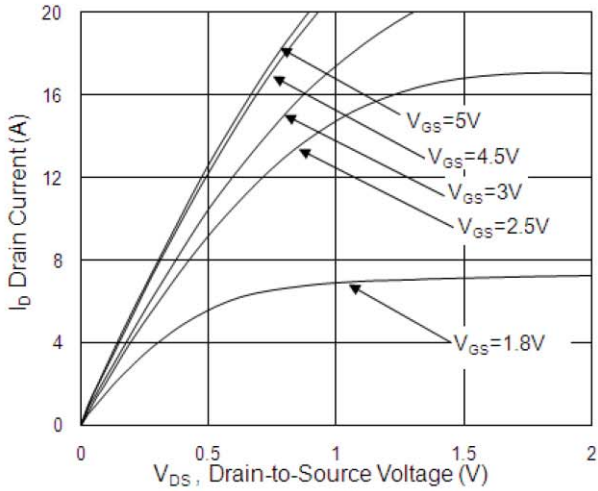


Fig.1 Typical Output Characteristics

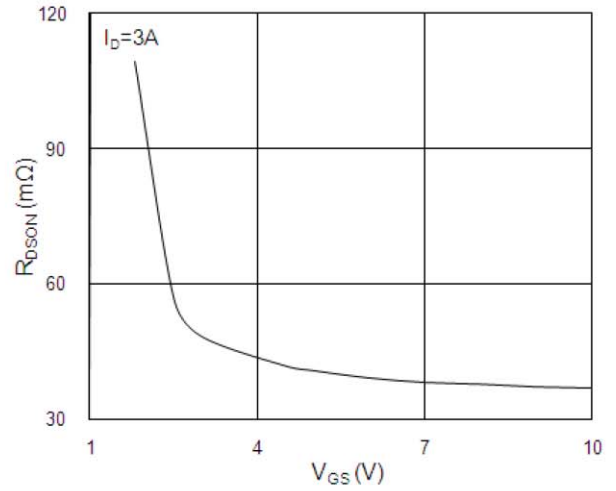


Fig.2 On-Resistance vs. Gate-Source Voltage

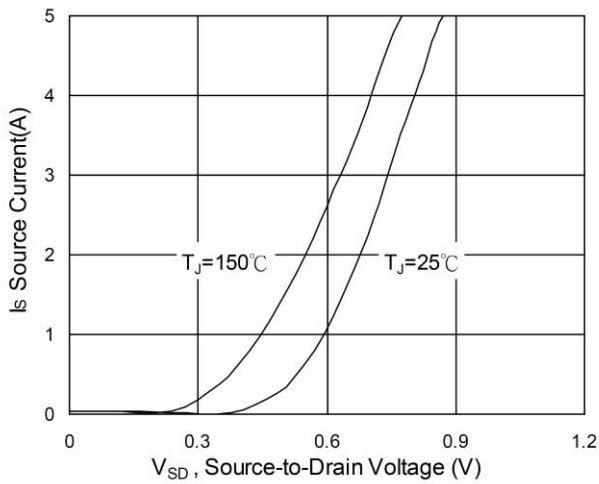


Fig.3 Forward Characteristics of Reverse

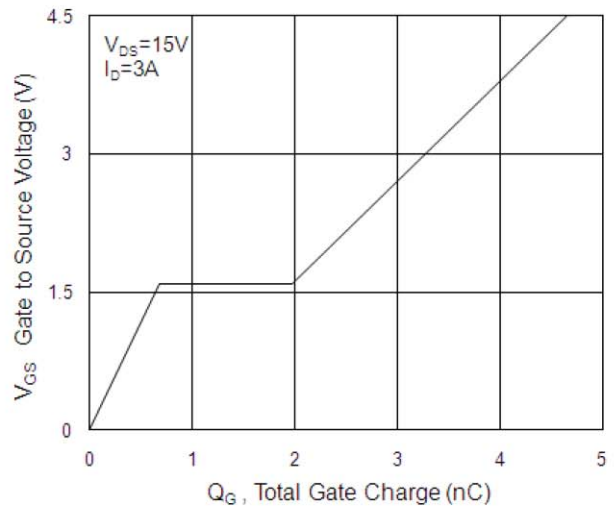


Fig.4 Gate-Charge Characteristics

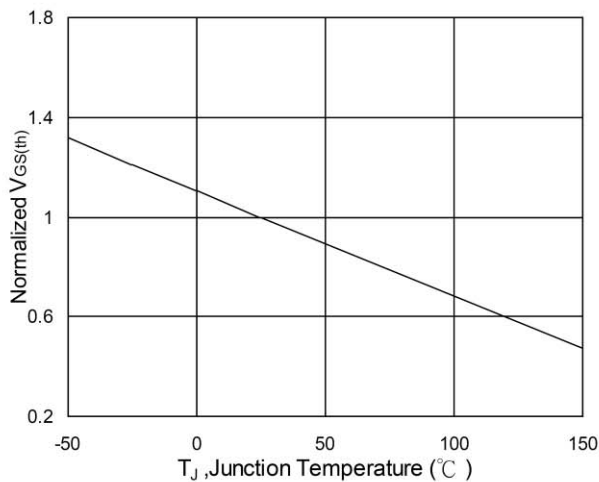


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

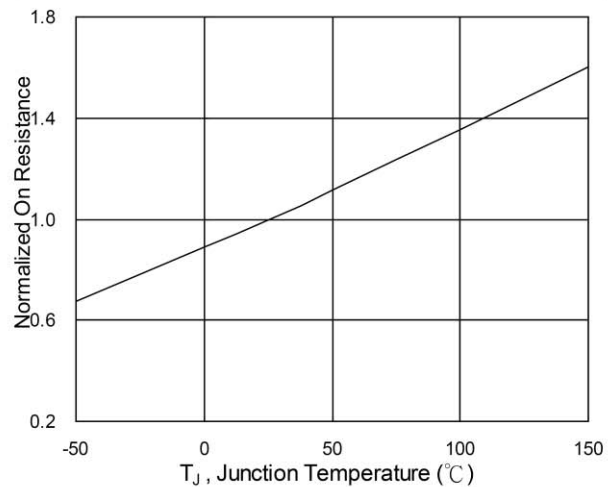


Fig.6 Normalized $R_{DS(on)}$ vs. T_J

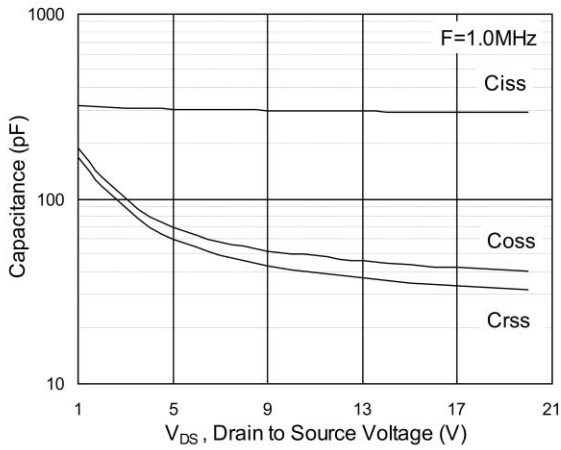


Fig.7 Capacitance

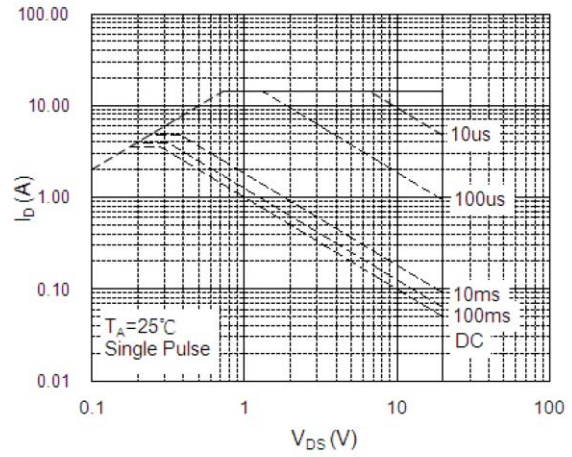


Fig.8 Safe Operating Area

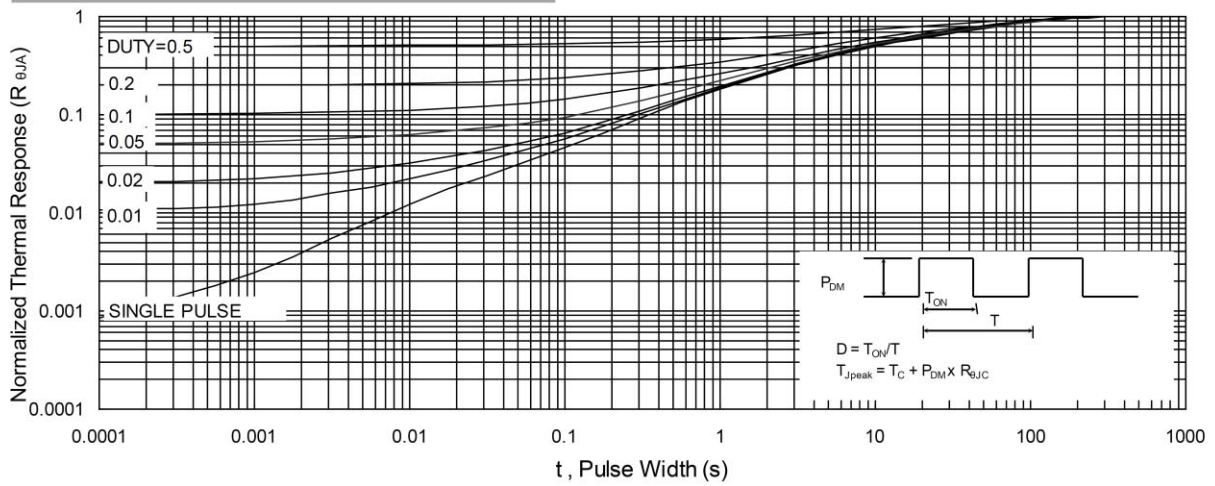
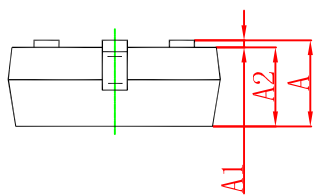
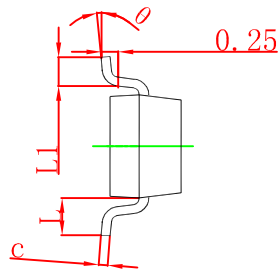
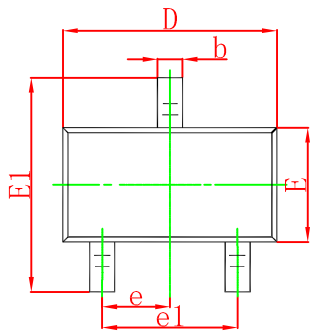


Fig.9 Normalized Maximum Transient Thermal Impedance

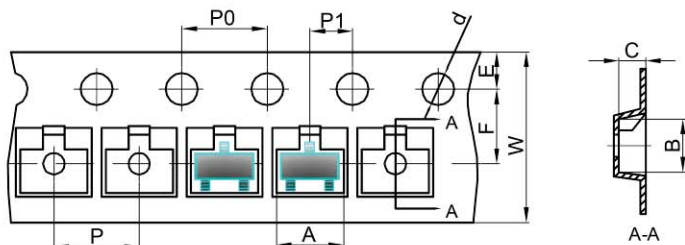
SOT-23 Package Information



| 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° |

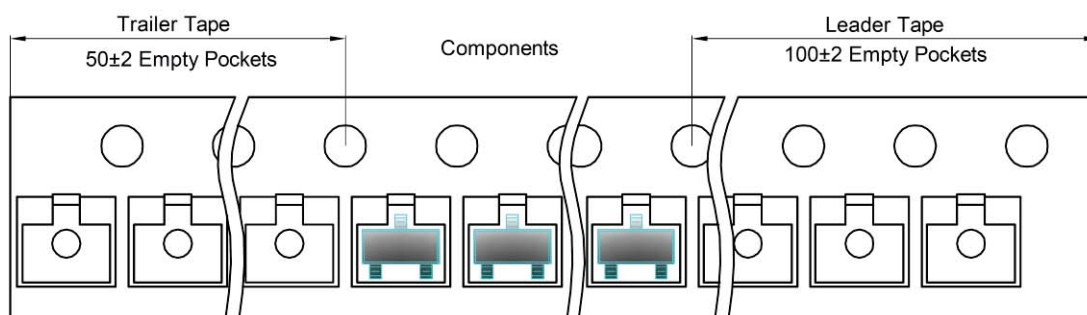
SOT-23 Tape and reel

SOT-23 Embossed Carrier Tape

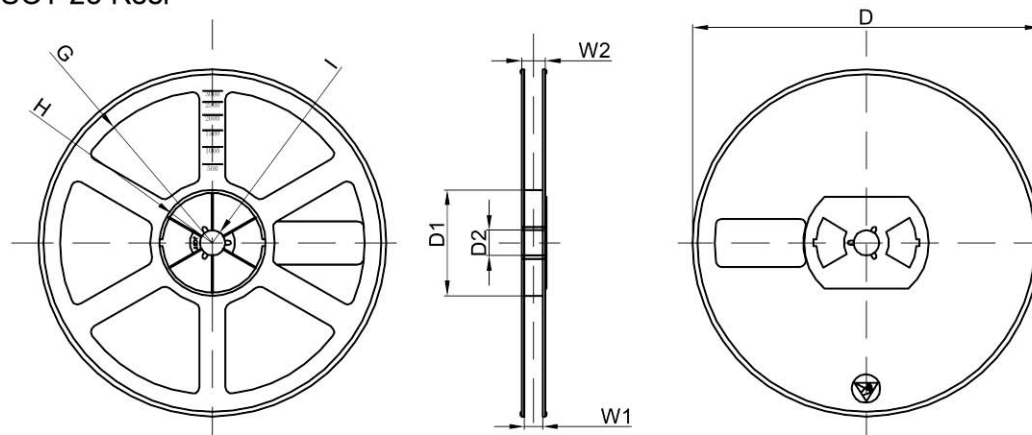


| Dimensions are in millimeter | | | | | | | | | | |
|------------------------------|------|------|------|-------|------|------|------|------|------|------|
| Pkg type | A | B | C | d | E | F | P0 | P | P1 | W |
| SOT-23 | 3.15 | 2.77 | 1.22 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |

SOT-23 Tape Leader and Trailer



SOT-23 Reel



| Dimensions are in millimeter | | | | | | | | |
|------------------------------|---------|-------|-------|--------|--------|-------|------|-------|
| Reel Option | D | D1 | D2 | G | H | I | W1 | W2 |
| 7" Dia | Ø178.00 | 54.40 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 12.30 |

| REEL | Reel Size | Box | Box Size(mm) | Carton | Carton Size(mm) | G.W.(kg) |
|----------|-----------|------------|--------------|-------------|-----------------|----------|
| 3000 pcs | 7 inch | 30,000 pcs | 203×203×195 | 120,000 pcs | 438×438×220 | |

单击下面可查看定价，库存，交付和生命周期等信息

[>>GP\(格瑞宝\)](#)