

/ Descriptions

SOT23-3 P MOS - CHANNEL MOSFET in a SOT23-3 Plastic Package.

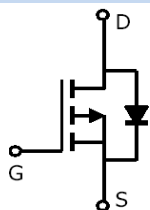
/ Features

$V_{DS}(V) = -30V$
 $I_D = -4.2 A (V_{GS} = -10V)$
 $R_{DS(ON)} < 60m (V_{GS} = -10V)$
 $R_{DS(ON)} < 65m (V_{GS} = -4.5V)$
 $R_{DS(ON)} < 120m (V_{GS} = -2.5V)$
alogen free product.

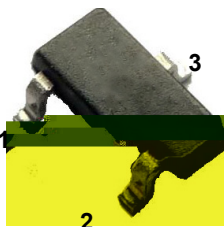
/ Applications

This device is suitable for use as a load switch or in PWM applications.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 S PIN 3 D

/ Marking

| | |
|---------|-----|
| Marking | B1H |
|---------|-----|

/ Absolute Maximum Ratings(Ta=25)

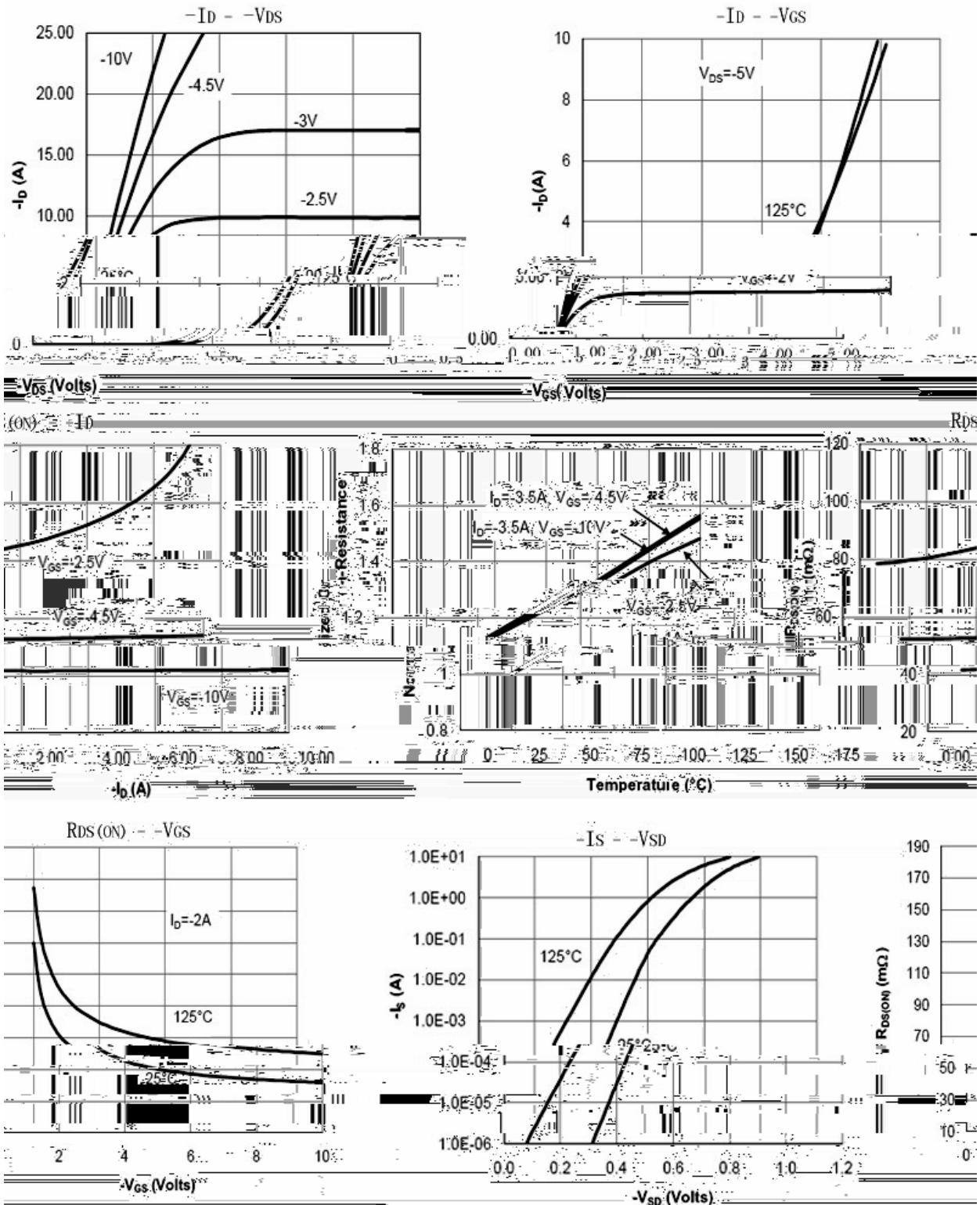
| Parameter | Symbol | Rating | Unit |
|--|------------------------|------------|---------------|
| Drain-Source Voltage | V_{DS} | -30 | V |
| Drain Current – Continuous | I_D | -4.2 | A |
| Drain Current- Continuous ^A | $I_D(T_a=70^{\circ}C)$ | -3.5 | A |
| Pulsed Drain Current ^B | I_{DM} | -30 | A |
| Gate-Source Voltage | V_{GS} | ± 12 | V |
| Total Power Dissipation ^A | P_D | 1.4 | W |
| Total Power Dissipation ^A | $P_D(T_a=70^{\circ}C)$ | 1.0 | W |
| Operating and Storage Junction Temperature Range | T_J, T_{STG} | -55 to 150 | $^{\circ}C$ |
| Maximum Junction-to-Ambient ^A | R_{JA} | 125 | $^{\circ}C/W$ |
| Maximum Junction-to-Lead ^C | R_{JL} | 60 | $^{\circ}C/W$ |

/ Electrical Characteristics(Ta=25)

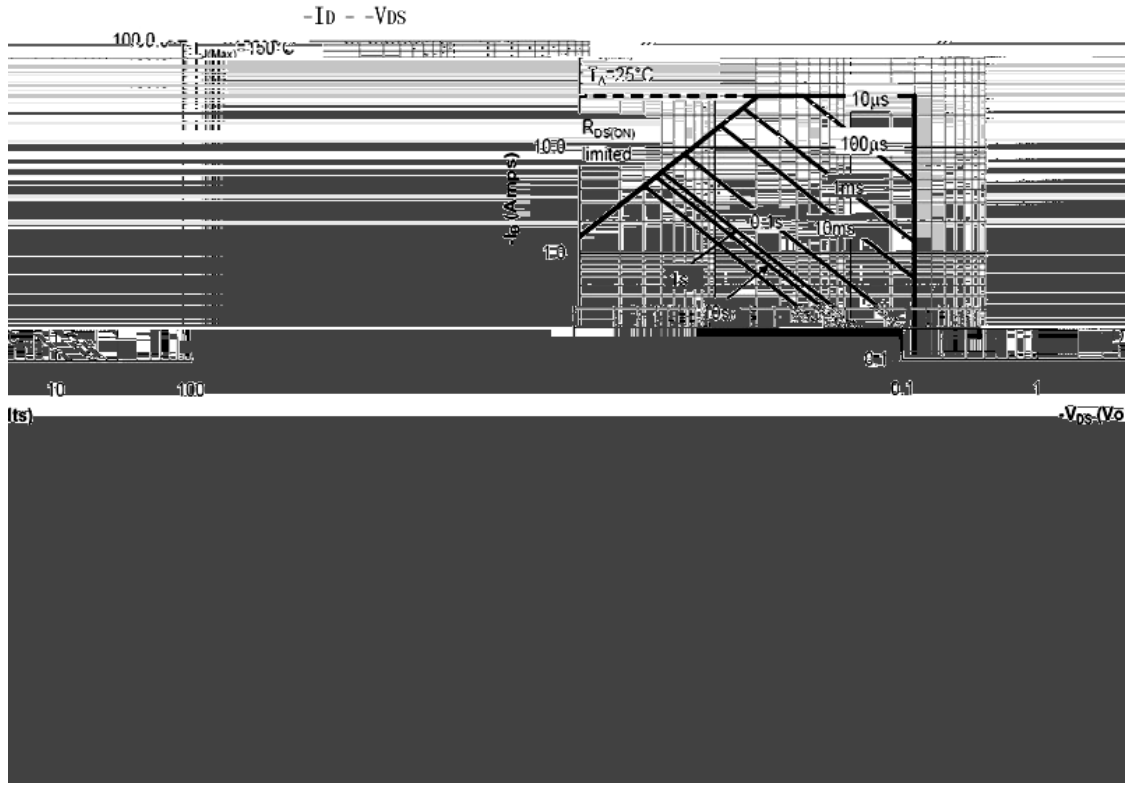
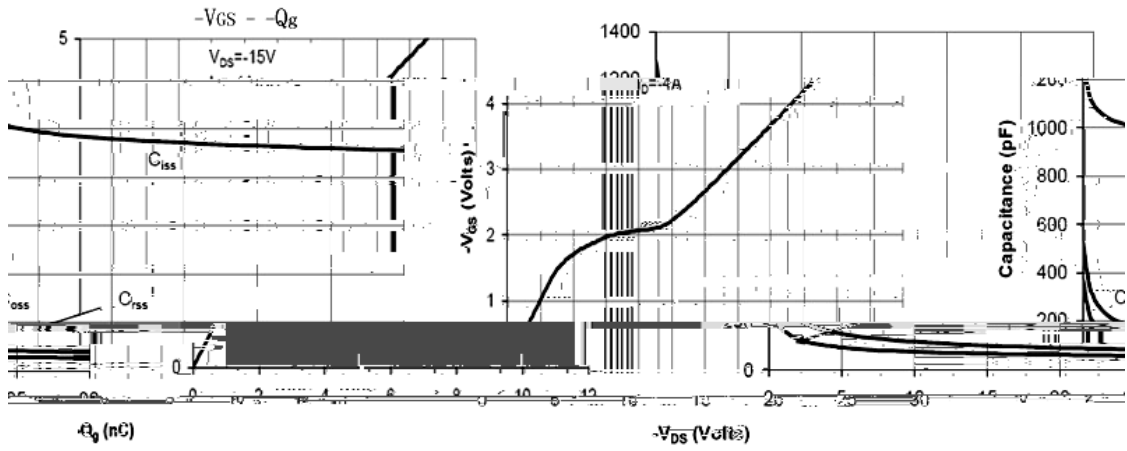
| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|------------------------------------|-----------------|---|------|-------|-----------|------|
| Drain–Source Breakdown Voltage | BV_{DSS} | $V_{GS}=0V$ $I_D=-250$ A | -30 | | | V |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS}=-24V$ $V_{GS}=0V$ | | | -1 | A |
| | | $V_{DS}=-24V$ $V_{GS}=0V$ $T_J=55^{\circ}C$ | | | -5 | A |
| Gate–Body Leakage. | I_{GSS} | $V_{GS}=\pm 12V$ $V_{DS}=0V$ | | | ± 0.1 | A |
| On–State Drain Current | $I_{D(on)}$ | $V_{GS}=-4.5V$ $V_{DS}=-5V$ | -25 | | | A |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}=V_{GS}$ $I_D=-250$ A | -0.7 | -1 | -1.3 | V |
| Static Drain–Source On–Resistance | $R_{DS(on)(1)}$ | $V_{GS}=-10V$ $I_D=-4.2A$ | | 52 | 60 | m |
| | $R_{DS(on)(2)}$ | $V_{GS}=-10V$ $I_D=-4.2A$ $T_J=125^{\circ}C$ | | | 75 | |
| | $R_{DS(on)(3)}$ | $V_{GS}=-4.5V$ $I_D=-4A$ | | 60 | 65 | |
| | $R_{DS(on)(4)}$ | $V_{GS}=-2.5V$ $I_D=-1A$ | | 75 | 120 | |
| Forward Transconductance | g_{FS} | $V_{DS}=-5V$ $I_D=-5A$ | 4 | 8 | | S |
| Drain–Source Diode Forward Voltage | V_{SD} | $V_{GS}=0V$ $I_S=-1A$ | | -0.75 | -1.0 | V |

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|------------------------------|-----------|---|-----|-----|-----|------|
| Input Capacitance | C_{iss} | $V_{DS}=-15V$ $V_{GS}=0V$ $f=1MHz$ | | 957 | | pF |
| Output Capacitance | C_{oss} | | | 115 | | |
| Reverse Transfer Capacitance | C_{rss} | | | 77 | | |
| Gate resistance | R_g | $V_{GS}=0V$ $V_{DS}=0V,$ $f=1MHz$ | | 6 | | |
| Total Gate Charge | Q_g | $V_{GS}=-4.5V$ $V_{DS}=-15V$ $I_D=-4A$ | | 9.4 | | nC |
| Gate Source Charge | Q_{gs} | | | 2 | | |

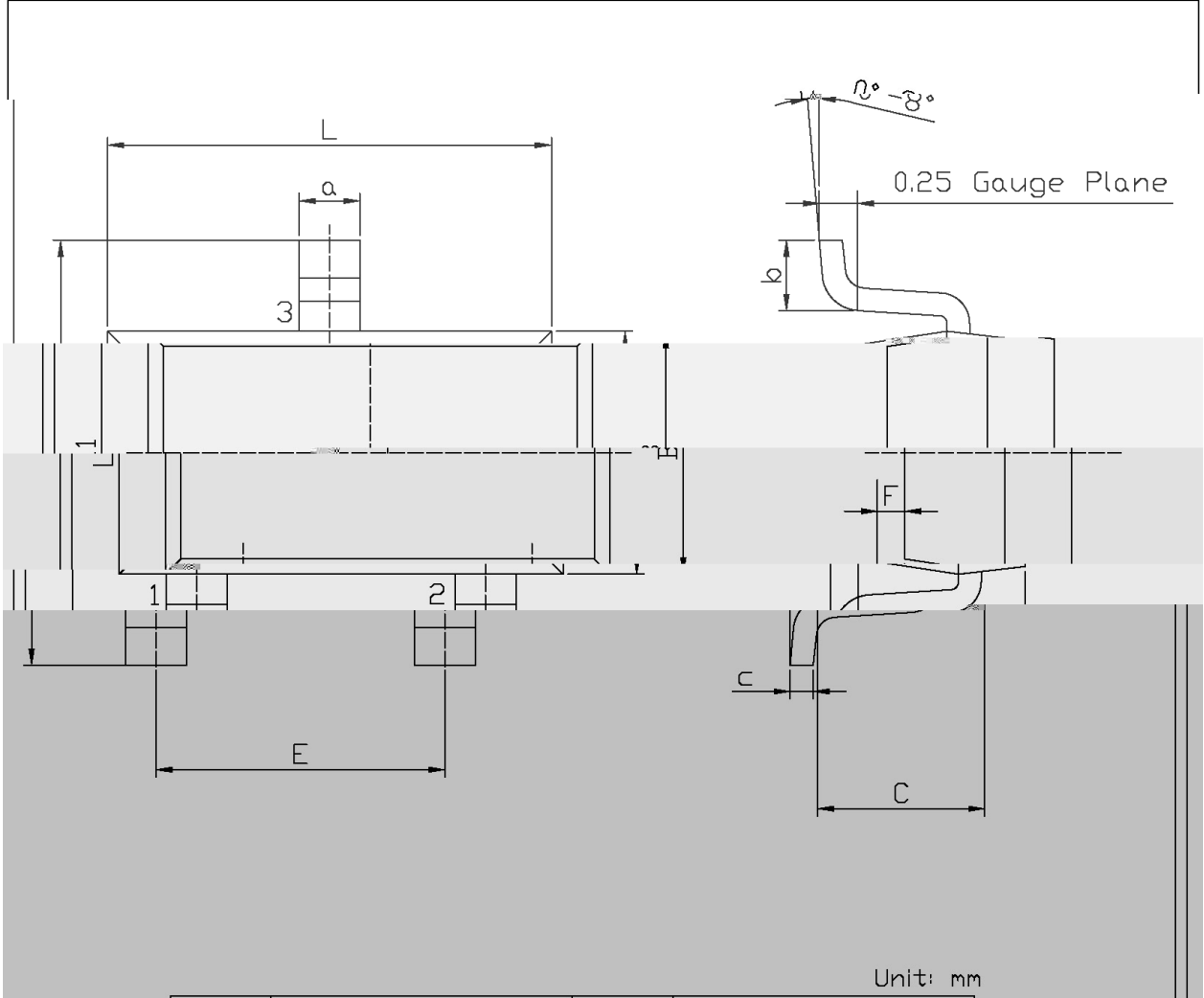
/ Electrical Characteristic Curve



/ Electrical Characteristic Curve



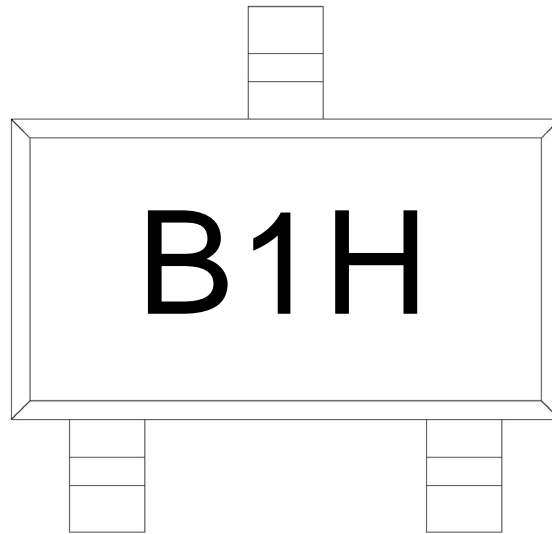
/ Package Dimensions



Unit: mm

| Dimension | Symbol | Value | Unit |
|------------------------------|--------|-------|------|
| Lead Length | C | 2.82 | mm |
| Lead Width | F | 2.02 | mm |
| Distance between features | E | 1.25 | mm |
| Distance from center to edge | 3 | 0.50 | mm |

/ **Marking Instructions**



B1

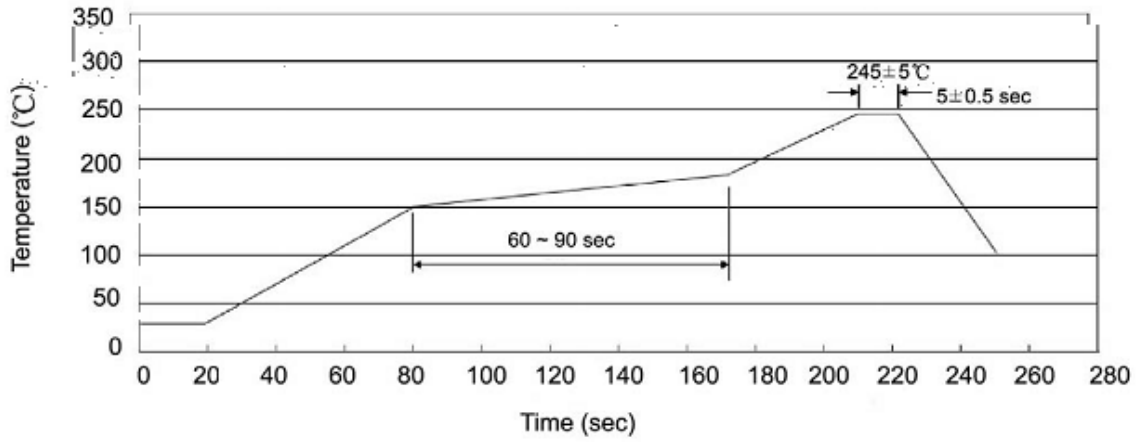
H

Note:

B1: Product Type Code.

H: Company Code.

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- | | | | | | |
|---|-----|-----|----|---------|---|
| 1 | 150 | 180 | 60 | 90sec; | 1.Preheating:150~180 , Time:60~90sec. |
| 2 | 245 | 5 | 5 | 0.5sec; | 2.Peak Temp.:245 5 , Duration:5 0.5sec. |
| 3 | | 2 | 10 | /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

260 5 10 1 sec. Temp.:260 5 Time:10 1 sec

/ Packaging SPEC.

/ REEL

| Package Type 封装形式 | Units 包装数量 | | | | | Dimension 包装尺寸 (unit: mm ³) | | |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|---|-------------|-------------|
| | Units/Reel 只/卷盘 | Reels/Inner Box 卷盘/盒 | Units/Inner Box 只/盒 | Inner Boxes/Outer Box 盒/箱 | Units/Outer Box 只/箱 | Reel | Inner Box 盒 | Outer Box 箱 |
| SOT-23-3 | 3,000 | 10 | 30,000 | 4 | 120,000 | 7" ×8 | 210×205×205 | 445×230×435 |

/ Notices