

**/ Descriptions**

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

**/ Features**

$V_{DS}(V) = -30V$

$I_D = -4.2 A (V_{GS} = -10V)$

$R_{DS(ON)} < 60m \quad (V_{GS} = -10V)$

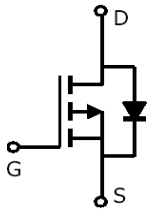
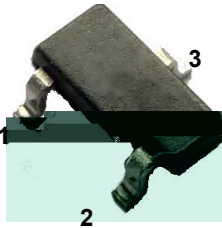
$R_{DS(ON)} < 65m \quad (V_{GS} = -4.5V)$

$R_{DS(ON)} < 120m \quad (V_{GS} = -2.5V)$

Halogen 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 )

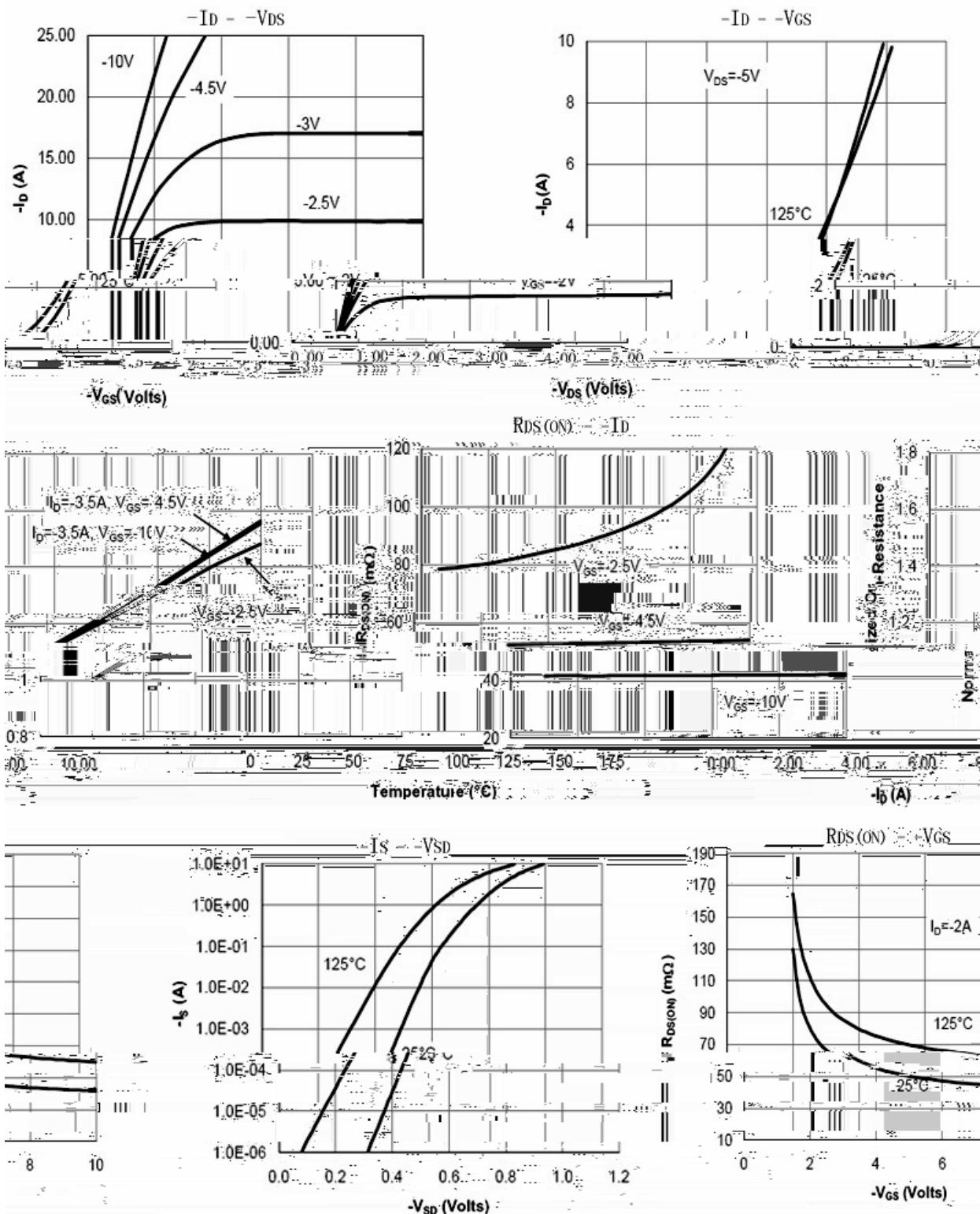
| Parameter                                        | Symbol                        | Rating     | Unit                 |
|--------------------------------------------------|-------------------------------|------------|----------------------|
| Drain-Source Voltage                             | $V_{DS}$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

## / Electrical Characteristics(Ta=25 )

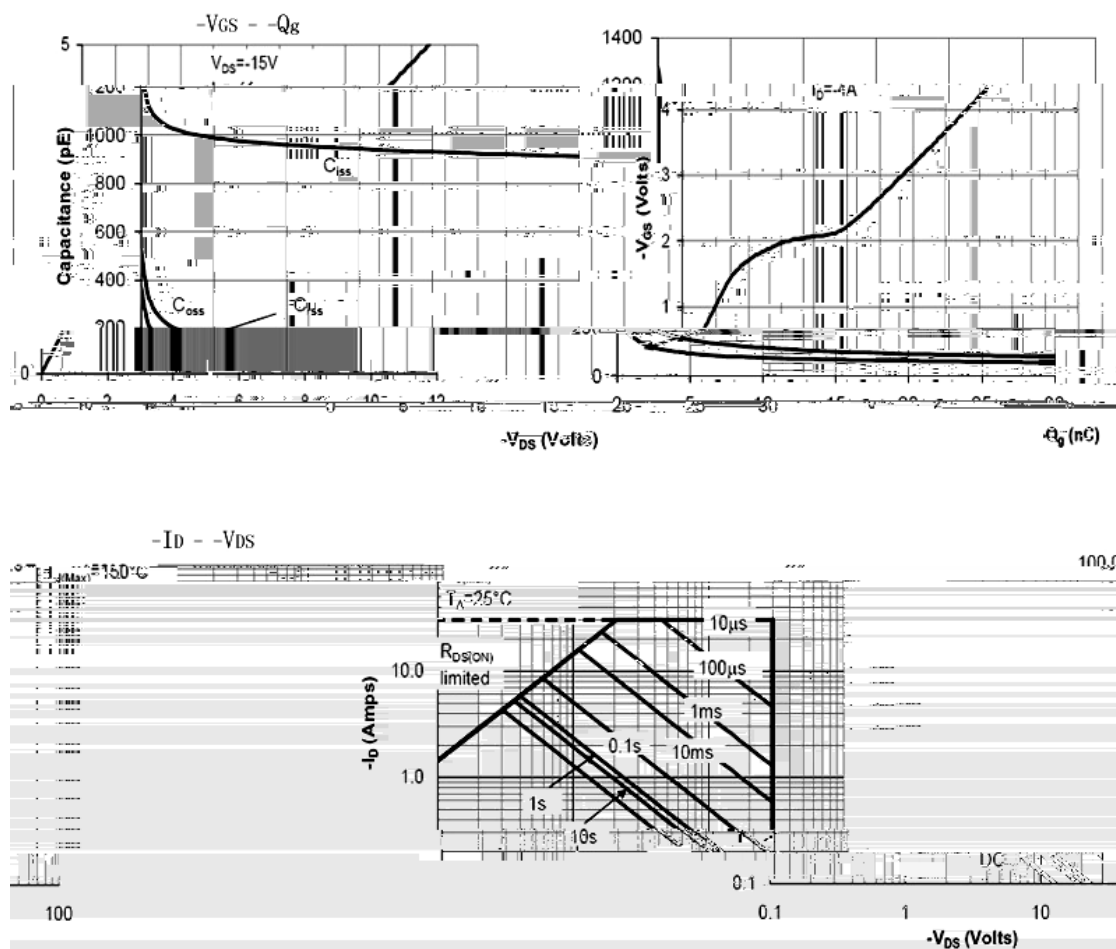
| Parameter                          | Symbol          | Test Conditions                                        | Min  | Typ   | Max       | Unit    |
|------------------------------------|-----------------|--------------------------------------------------------|------|-------|-----------|---------|
| Drain–Source Breakdown Voltage     | $BV_{DSS}$      | $V_{GS}=0V$ $I_D=-250\mu A$                            | -30  |       |           | V       |
| Zero Gate Voltage Drain Current    | $I_{DSS}$       | $V_{DS}=-24V$ $V_{GS}=0V$                              |      |       | -1        | $\mu A$ |
|                                    |                 | $V_{DS}=-24V$ $V_{GS}=0V$<br>$T_J=55^{\circ}\text{C}$  |      |       | -5        | $\mu A$ |
| Gate–Body Leakage.                 | $I_{GSS}$       | $V_{GS}=\pm 12V$ $V_{DS}=0V$                           |      |       | $\pm 0.1$ | $\mu A$ |
| On–State Drain Current             | $I_{D(on)}$     | $V_{GS}=-4.5V$ $V_{DS}=-5V$                            | -25  |       |           | A       |
| Gate Threshold Voltage             | $V_{GS(th)}$    | $V_{DS}=V_{GS}$ $I_D=-250\mu A$                        | -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       |
|                                    | $R_{DS(on)(2)}$ | $V_{GS}=-10V$ $I_D=-4.2A$<br>$T_J=125^{\circ}\text{C}$ |      |       | 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            | $C_{iss}$ | $V_{DS}=-15V$ $V_{GS}=0V$<br>$f=1MHz$     |     | 957 |     | pF   |
| Output Capacitance           | $C_{oss}$ |                                           |     | 115 |     |      |
| Reverse Transfer Capacitance | $C_{rss}$ |                                           |     | 77  |     |      |
| Gate resistance              | $R_g$     | $V_{GS}=0V$ $V_{DS}=0V,$<br>$f=1MHz$      |     | 6   |     |      |
| Total Gate Charge            | $Q_g$     | $V_{GS}=-4.5V$ $V_{DS}=-15V$<br>$I_D=-4A$ |     | 9.4 |     | nC   |
| Gate Source Charge           | $Q_{gs}$  |                                           |     | 2   |     |      |

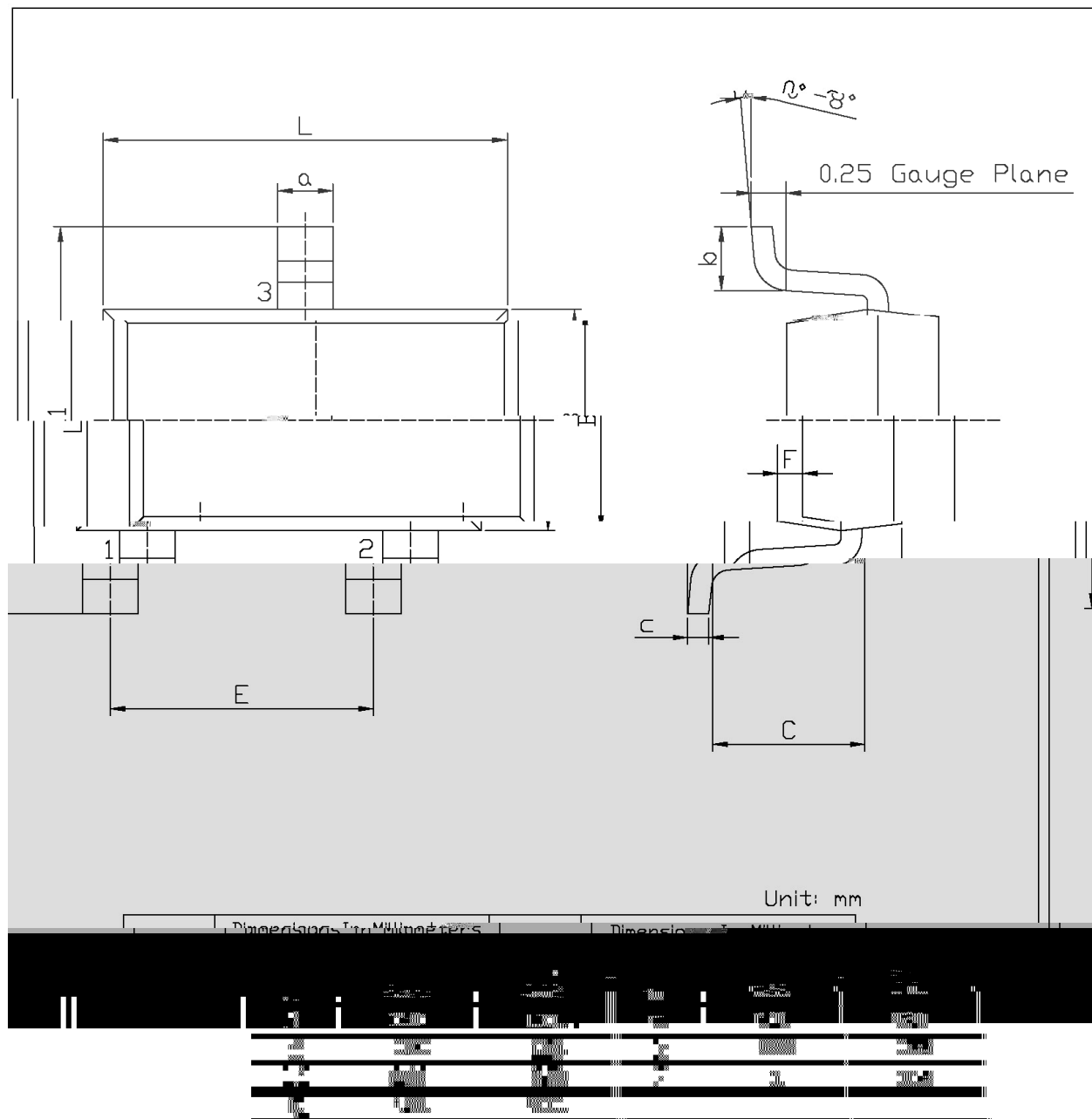
/ **Electrical Characteristic Curve**



/ Electrical Characteristic Curve

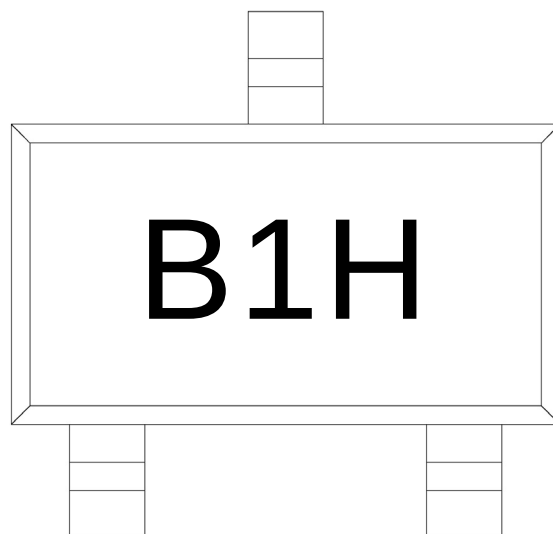


/ Package Dimensions



SC-73B-3

/ **Marking Instructions**



B1

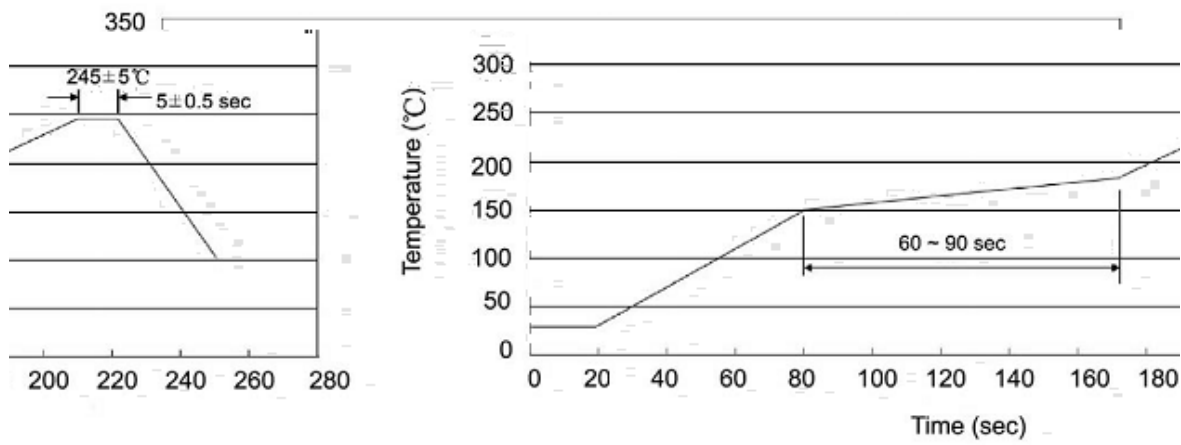
H

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<br>封装形式 | Units 包装数量         |                         |                        |                              |                        | Dimension 包装尺寸 (unit: mm <sup>3</sup> ) |             |             |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|-----------------------------------------|-------------|-------------|
|                      | Units/Reel<br>只/卷盘 | Reels/Inner Box<br>卷盘/盒 | Units/Inner Box<br>只/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>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