

IMH20TR1G

Dual Bias Resistor Transistor

NPN Surface Mount

- Low V_{CC} (sat) 80 mV max at $I_C/I_B = 50$ mA/2.5 mA
- High Current: $I_C = 600$ mA max
- This is a Pb-Free Device

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

| Rating | Symbol | Value | Unit |
|--------------------------------|---------------|-------|------|
| Collector-Base Voltage | $V_{(BR)CBO}$ | 30 | Vdc |
| Collector-Emitter Voltage | $V_{(BR)CEO}$ | 15 | Vdc |
| Emitter-Base Voltage | $V_{(BR)EBO}$ | 5.0 | Vdc |
| Collector Current - Continuous | I_C | 600 | mAdc |

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|----------------------|-----------|-------------|------------------|
| Power Dissipation* | P_D | 300 | mW |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

*Total for both Transistors.

Q1 + Q2: NPN

ELECTRICAL CHARACTERISTICS

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

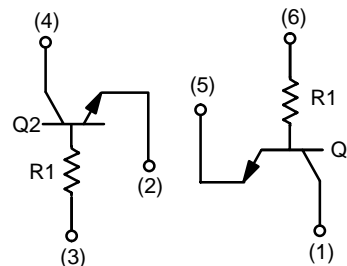
| Characteristic | Symbol | Min | Max | Unit |
|--|---------------|------|------|------------|
| Collector-Emitter Breakdown Voltage ($I_C = 1.0$ mAdc, $I_E = 0$) | $V_{(BR)CEO}$ | 15 | - | Vdc |
| Collector-Base Breakdown Voltage ($I_C = 50$ μ Adc, $I_E = 0$) | $V_{(BR)CBO}$ | 30 | - | Vdc |
| Emitter-Base Breakdown Voltage ($I_E = 50$ μ Adc, $I_C = 0$) | $V_{(BR)EBO}$ | 5.0 | - | Vdc |
| Collector-Base Cutoff Current ($V_{CB} = 20$ Vdc, $I_E = 0$) | I_{CBO} | - | 0.5 | μ Adc |
| Emitter-Base Cutoff Current ($V_{EB} = 4.0$ V, $I_C = 0$) | I_{EBO} | - | 0.5 | μ Adc |
| DC Current Gain (Note 1) ($V_{CE} = 5.0$ Vdc, $I_C = 50$ mAdc) | h_{FE} | 100 | 600 | - |
| Collector-Emitter Saturation Voltage ($I_C = 50$ mAdc, $I_B = 2.5$ mAdc) | $V_{CE(sat)}$ | - | 80 | mV |
| Input Resistance | R_1 | 1.54 | 2.86 | k Ω |

1. Pulse Test: Pulse Width ≤ 300 μ s, D.C. $\leq 2\%$.



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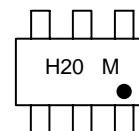


SC-74



SC-74R
318AA
Style 21

MARKING DIAGRAM



H20 = Specific Device Code
M = Date Code

ORDERING INFORMATION

| Device | Package | Shipping† |
|-----------|---------|------------------|
| IMH20TR1G | SC-74R | 3000/Tape & Reel |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

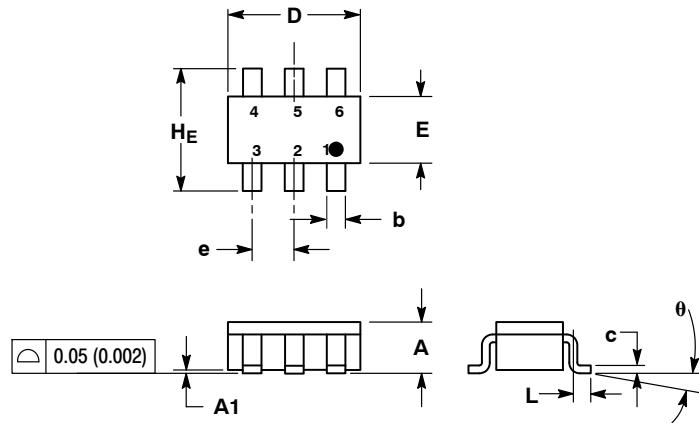
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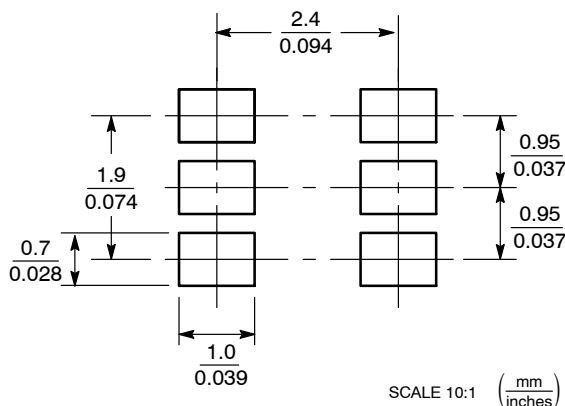
SCALE 2:1

SC-74R
CASE 318AA-01
ISSUE B

DATE 27 MAY 2005



SOLDERING FOOTPRINT*



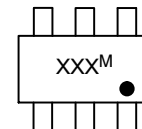
SCALE 10:1 (mm/inches)

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|------|--------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.90 | 1.00 | 1.10 | 0.035 | 0.039 | 0.043 |
| A1 | 0.01 | 0.06 | 0.10 | 0.001 | 0.002 | 0.004 |
| b | 0.25 | 0.37 | 0.50 | 0.010 | 0.015 | 0.020 |
| c | 0.10 | 0.18 | 0.26 | 0.004 | 0.007 | 0.010 |
| D | 2.90 | 3.00 | 3.10 | 0.114 | 0.118 | 0.122 |
| E | 1.30 | 1.50 | 1.70 | 0.051 | 0.059 | 0.067 |
| e | 0.85 | 0.95 | 1.05 | 0.034 | 0.037 | 0.041 |
| L | 0.20 | 0.40 | 0.60 | 0.008 | 0.016 | 0.024 |
| HE | 2.50 | 2.75 | 3.00 | 0.099 | 0.108 | 0.118 |
| θ | 0° | — | 10° | 0° | — | 10° |

GENERIC MARKING DIAGRAM*



- XXX = Specific Device Code
M = Date Code
■ = Pb-Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "■", may or may not be present.

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

STYLE 20:
PIN 1. COLLECTOR 1
2. BASE 2
3. EMITTER 2
4. COLLECTOR 2
5. BASE 1
6. EMITTER 1

STYLE 21:
PIN 1. COLLECTOR 1
2. EMITTER 2
3. BASE 2
4. COLLECTOR 2
5. EMITTER 1
6. BASE 1

| | | |
|------------------|-------------|--|
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| DESCRIPTION: | SC-74R | PAGE 1 OF 1 |

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