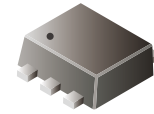


AEMH11-HF (NPN)

RoHS Device

Halogen Free

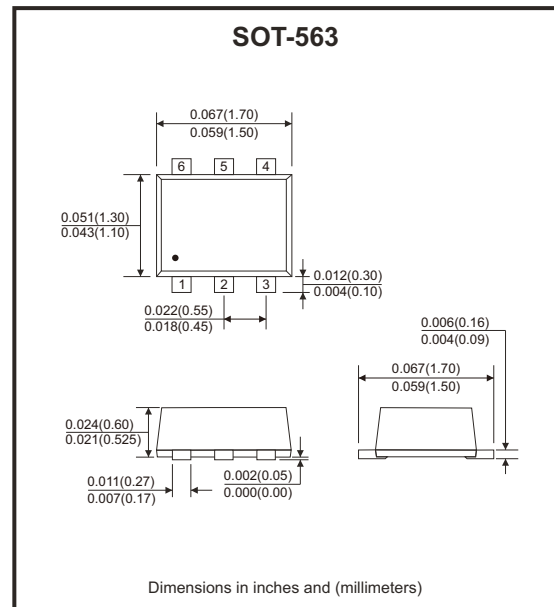


Features

- Reduces board space.
- Reduces component count.
- Surface mount package suited for automated assembly.
- AEC-Q101 Qualified.

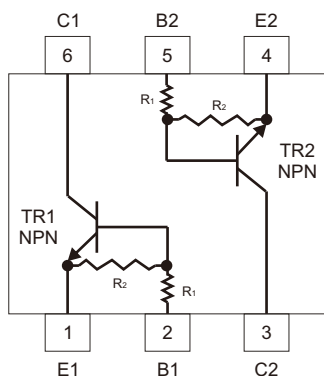
Mechanical data

- Case: SOT-563, molded plastic.
- Molding compound: UL flammability classification rating 94V-0.
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, method 208.



Circuit Diagram

B: Base
C: Collector
E: Emitter



Maximum Ratings (at Ta=25°C unless otherwise noted)

| Parameter | Symbol | TR1 | TR2 | Units |
|-------------------|-----------------|------------|------------|-------|
| Supply voltage | V _{CC} | 50 | 50 | V |
| Input voltage | V _{IN} | -10 to +40 | -10 to +40 | V |
| Output current | I _O | 50 | 50 | mA |
| Collector current | I _C | 100 | 100 | mA |

Thermal Characteristics

| Parameter | Symbol | Value | Units |
|--------------------------------------|------------------|-------------|-------|
| Power dissipation | P _D | 150 | mW |
| Operating junction temperature range | T _J | -55 to +150 | °C |
| Storage temperature range | T _{STG} | -55 to +150 | °C |

Electrical Characteristics - TR1 and TR2 (at Ta=25°C unless otherwise noted)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Units |
|------------------------|--------------|--|-----|-----|------|------------|
| Input voltage | $V_{I(off)}$ | $V_{CC} = 5V, I_o = 100\mu A$ | 0.5 | | | V |
| | $V_{I(on)}$ | $V_o = 0.3V, I_o = 10mA$ | | | 3 | |
| Output voltage | $V_{O(on)}$ | $I_o = 10mA, I_i = 0.5mA$ | | 0.1 | 0.3 | V |
| Input current | I_i | $V_i = 5V$ | | | 0.88 | mA |
| Output current | $I_{o(off)}$ | $V_{CC} = 50V, V_i = 0V$ | | | 0.5 | μA |
| DC current gain | G_i | $V_o = 5V, I_o = 5mA$ | 30 | | | |
| Input resistor | R_i | | 7 | 10 | 13 | k Ω |
| Resistance ratio | R_z/R_i | | 0.8 | 1 | 1.2 | |
| Gain-bandwidth product | f_r | $V_{CE} = 10V, I_E = -5mA, f = 100MHz$ | | 250 | | MHz |

Rating and Characteristic Curves - TR1 and TR2 (AEMH11-HF)

Fig.1 - Input Voltage vs. Output Current (On Characteristics)

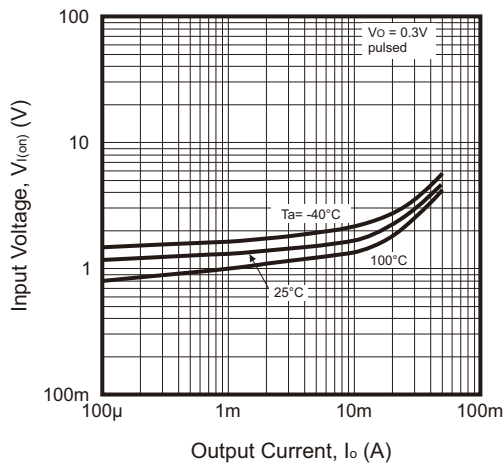


Fig.2 - Output Current vs. Input Voltage (Off Characteristics)

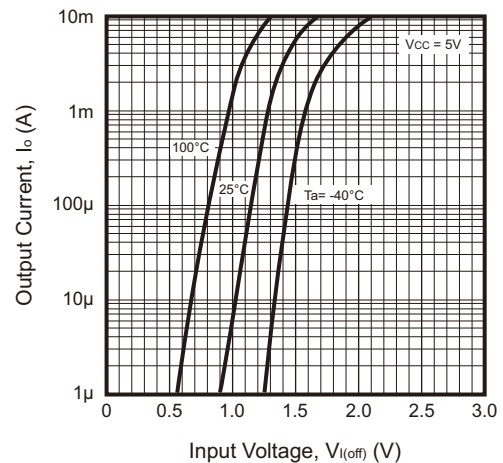


Fig.3 - Output Current vs. Output Voltage

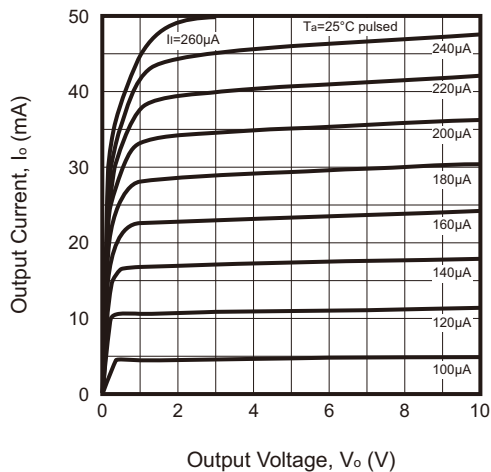
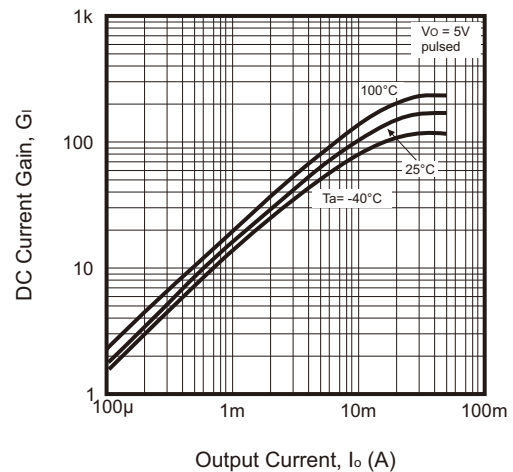
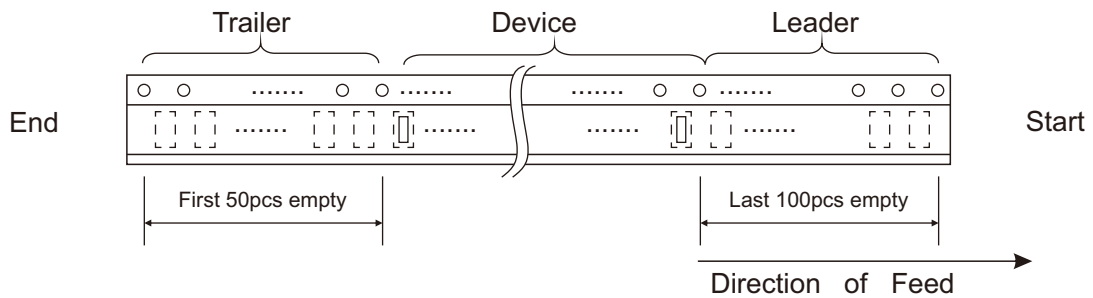
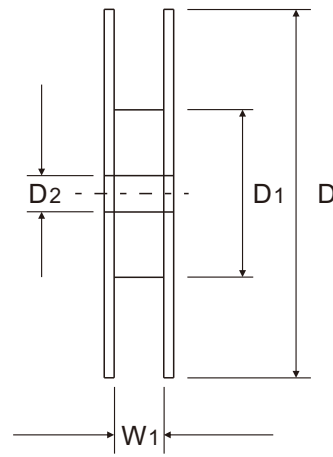
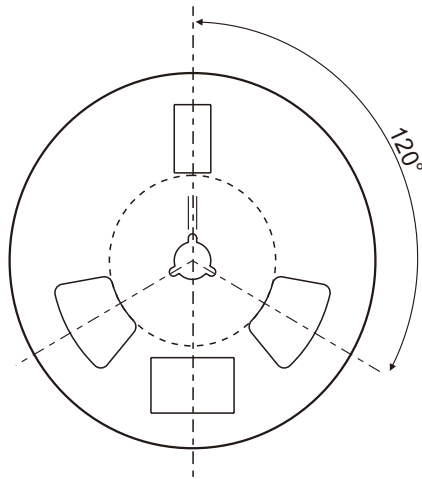
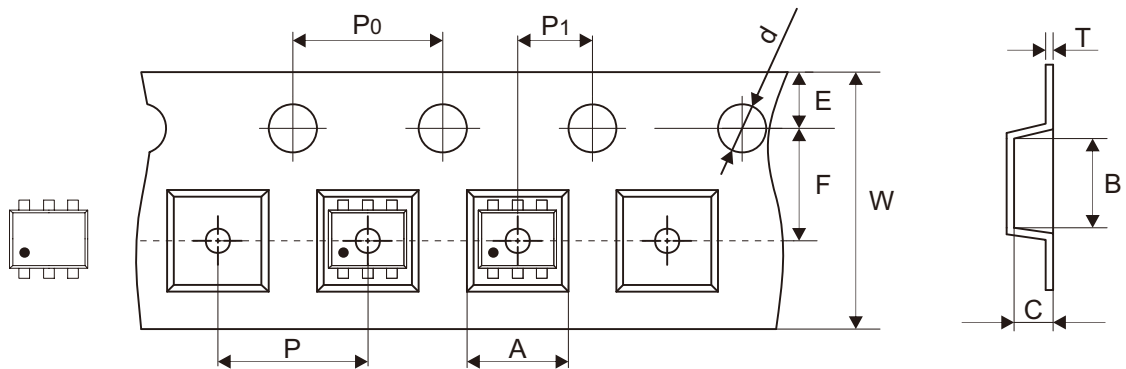


Fig.4 - DC Current Gain vs. Output Current



Reel Taping Specification

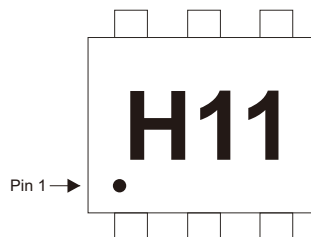


| SOT-563 | SYMBOL | A | B | C | d | D | D1 | D2 |
|---------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | (mm) | 1.78 ± 0.05 | 1.78 ± 0.05 | 0.69 ± 0.05 | 1.55 ± 0.05 | 178 ± 1.00 | 54.00 ± 0.50 | 13.50 ± 0.50 |
| | (inch) | 0.070 ± 0.002 | 0.070 ± 0.002 | 0.027 ± 0.002 | 0.061 ± 0.002 | 7.008 ± 0.039 | 2.126 ± 0.020 | 0.531 ± 0.020 |

| SOT-563 | SYMBOL | E | F | P | P0 | P1 | T | W | W1 |
|---------|--------|---------------|---------------|---------------|---------------|---------------|---------------|--------------------------|---------------|
| | (mm) | 1.75 ± 0.10 | 3.50 ± 0.05 | 4.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.05 | 0.20 ± 0.03 | 8.00 + 0.30 - 0.10 | 9.50 ± 1.00 |
| | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.008 ± 0.001 | 0.315 + 0.012 - 0.004 | 0.374 ± 0.039 |

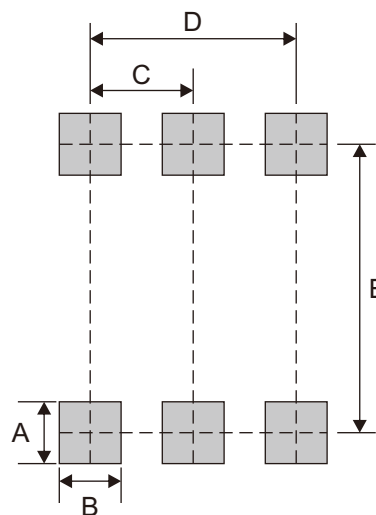
Marking Code

| Part Number | Marking Code |
|-------------|--------------|
| AEMH11-HF | H11 |



Suggested P.C.B. PAD Layout

| SIZE | SOT-563 | |
|------|---------|--------|
| | (mm) | (inch) |
| A | 0.30 | 0.012 |
| B | 0.30 | 0.012 |
| C | 0.50 | 0.020 |
| D | 1.00 | 0.039 |
| E | 1.40 | 0.055 |



Standard Packaging

| Case Type | REEL PACK | |
|-----------|------------|------------------|
| | REEL (pcs) | Reel Size (inch) |
| SOT-563 | 3,000 | 7 |