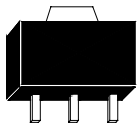
# HM2222A

NPN EPITAXIAL PLANAR TRANSISTOR



SOT-89

## Description

The HM2222A is designed for general purpose amplifier and high speed, medium-power switching applications.

## Features

- Low collector saturation voltage
- High speed switching
- For complementary use with PNP type HPN2907A

## Absolute Maximum Ratings

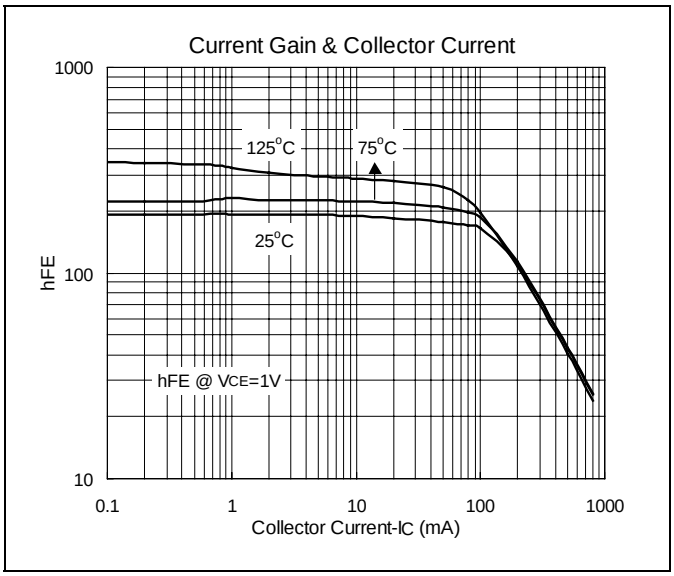
- Maximum Temperatures
  Storage Temperature ..... -55 ~ +150 °C
  Junction Temperature ..... +150 °C Maximum
- Maximum Power Dissipation
  Total Power Dissipation (Ta=25°C) ..... 1.2 W
- Maximum Voltages and Currents (Ta=25°C)
  VCBO Collector to Base Voltage ..... 75 V
  VCES Collector to Emitter Voltage ..... 40 V
  VEBO Emitter to Base Voltage ..... 6 V
  IC Collector Current..... 600 mA

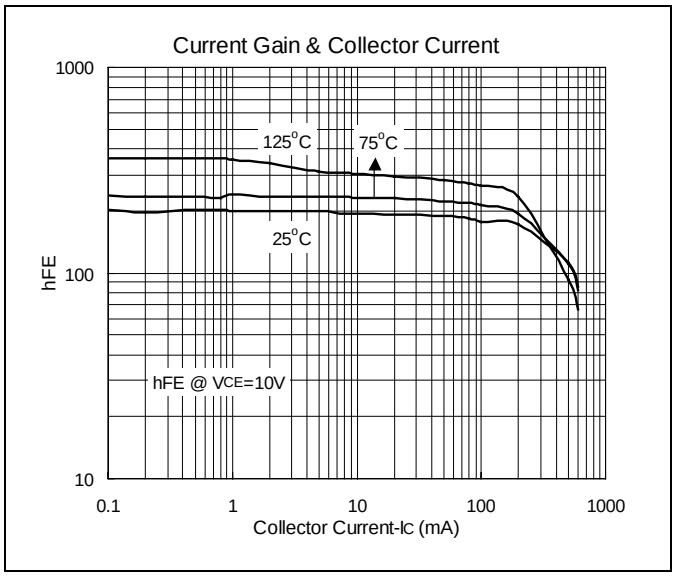
## Characteristics (Ta=25°C)

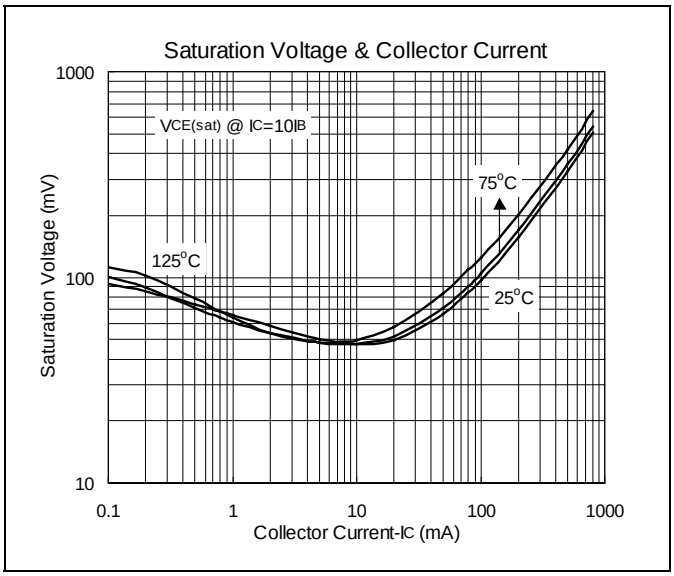
| Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|---|---|---|---|---|---|
| BVCBO | 75 | - | - | V | IC=10uA |
| BVCEO | 40 | - | - | V | IC=10mA |
| BVEBO | 6 | - | - | V | IE=10uA |
| ICBO | - | - | 10 | nA | VCB=60V |
| ICEX | - | - | 10 | nA | VCB=60V, VEB(off)=3V |
| IEBO | - | - | 50 | nA | VEB=3V |
| *VCE(sat)1 | - | - | 300 | mV | IC=150mA, IB=15mA |
| *VCE(sat)2 | - | - | 1 | V | IC=500mA, IB=50mA |
| *VBE(sat)1 | - | - | 1.2 | V | IC=150mA, IB=15mA |
| *VBE(sat)2 | - | - | 2 | V | IC=500mA, IB=50mA |
| *hFE1 | 35 | - | - | | VCE=10V, IC=100uA |
| *hFE2 | 50 | - | - | | VCE=10V, IC=1mA |
| *hFE3 | 75 | - | - | | VCE=10V, IC=10mA |
| *hFE4 | 100 | - | 300 | | VCE=10V, IC=150mA |
| *hFE5 | 40 | - | - | | VCE=10V, IC=500mA |
| *hFE6 | 50 | - | - | | VCE=1V, IC=150mA |
| fT | 300 | - | - | MHz | VCE=20V, IC=20mA, f=100MHz |

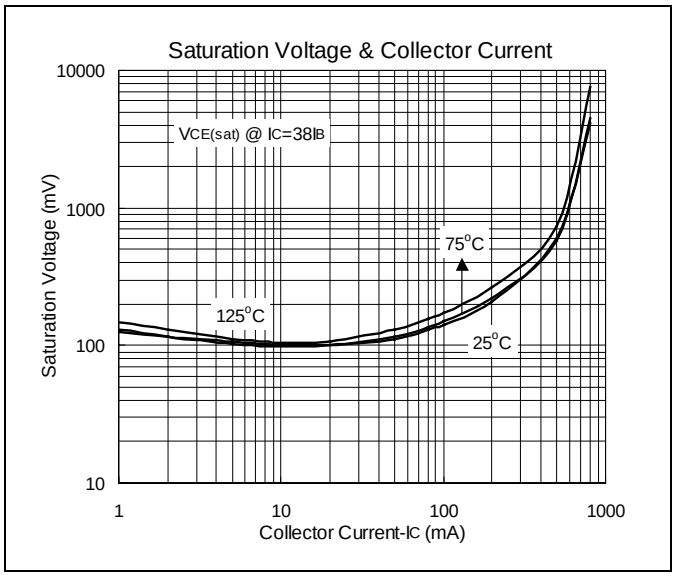
*Pulse Test: Pulse Width ≤380us, Duty Cycle≤2%

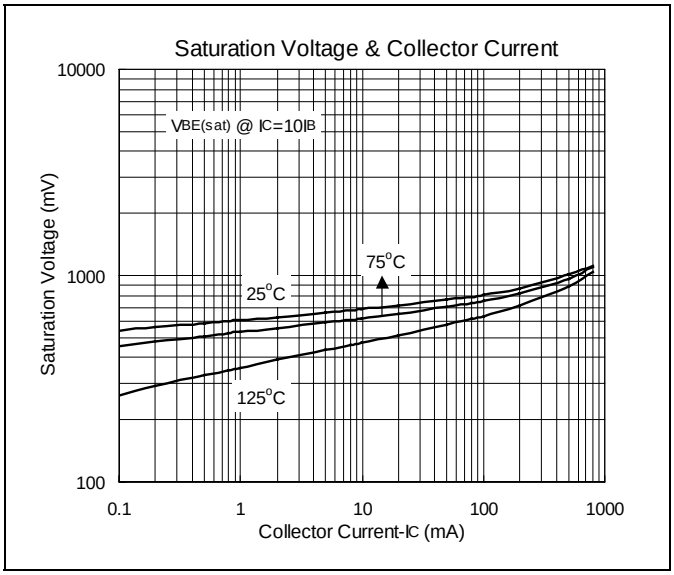
## Characteristics Curve

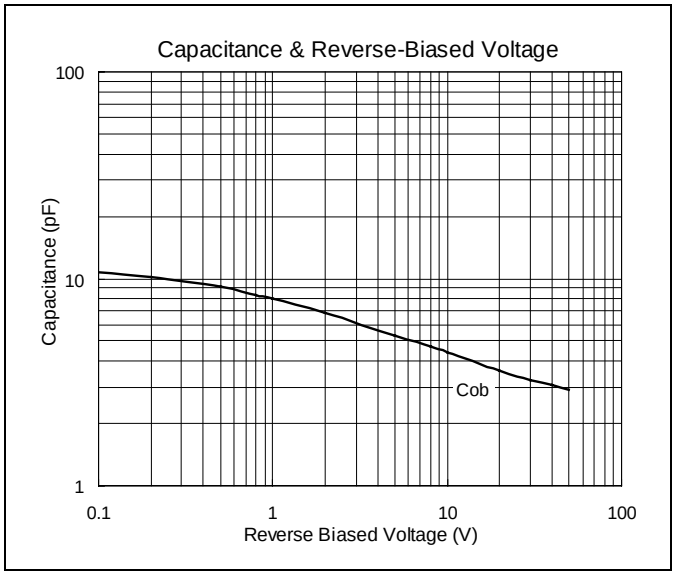


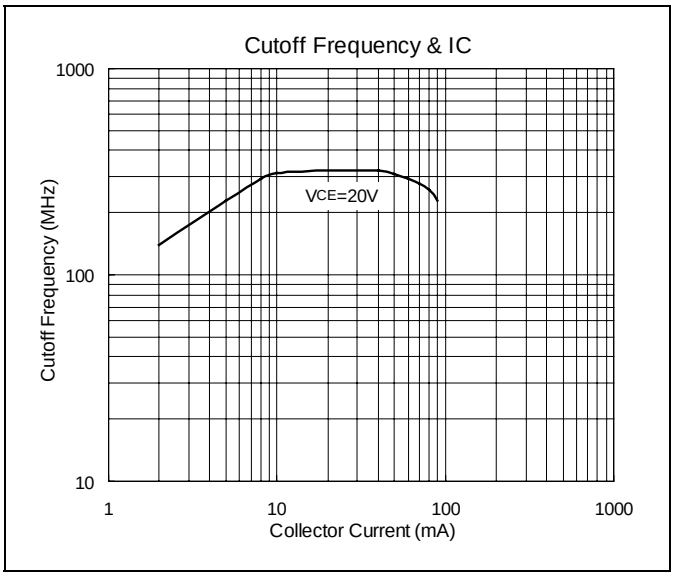



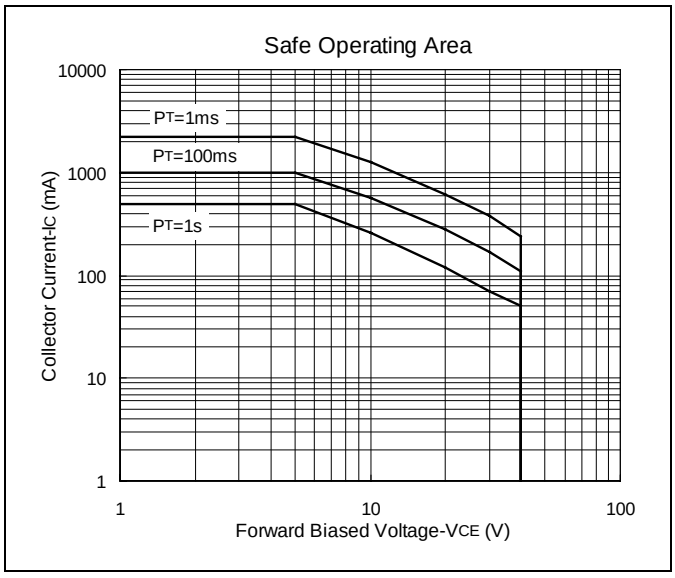



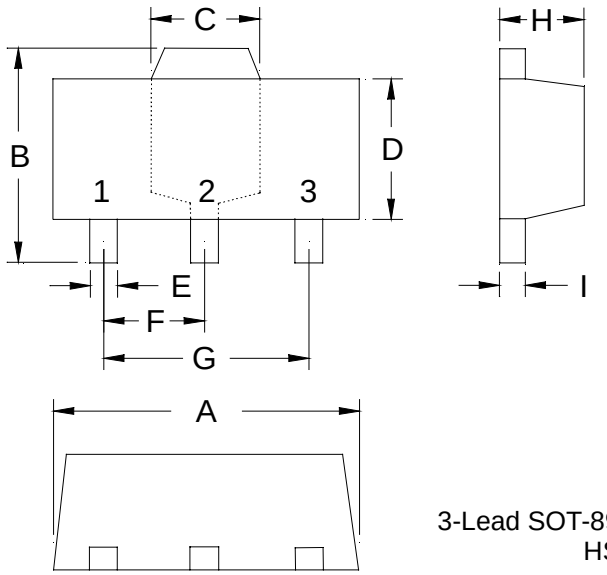



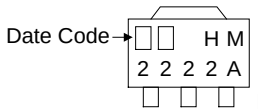

Cutoff Frequency & IC
1000
100
10
Cutoff Frequency (MHz)
VCE=20V
1
10
100
1000
Collector Current (mA)


Safe Operating Area
10000
1000
100
10
1
Collector Current-IC (mA)
PT=1ms
PT=100ms
PT=1s
1
10
100
Forward Biased Voltage-VCE (V)

## SOT-89 Dimension




Marking:




Laser Marking

Style: Pin 1.Base 2.Collector 3.Emitter

3-Lead SOT-89 Plastic Surface Mounted Package
HSMC Package Code: M

*: ypical

| DIM | Inches | | Millimeters | | DIM | Inches | | Millimeters | |
|---|---|---|---|---|---|---|---|---|---|
| | Min. | Max. | Min. | Max. | | Min. | Max. | Min. | Max. |
| A | 0.1732 | 0.1811 | 4.40 | 4.60 | F | 0.0583 | 0.0598 | 1.48 | 1.52 |
| B | 0.1594 | 0.1673 | 4.05 | 4.25 | G | 0.1165 | 0.1197 | 2.96 | 3.04 |
| C | 0.0591 | 0.0663 | 1.50 | 1.70 | H | 0.0551 | 0.0630 | 1.40 | 1.60 |
| D | 0.0945 | 0.1024 | 2.40 | 2.60 | I | 0.0138 | 0.0161 | 0.35 | 0.41 |
| E | 0.0141 | 0.0201 | 0.36 | 0.51 | | | | | |

Notes: 1.Dimension and tolerance based on our Spec. dated May. 05,1996.
2.Controlling dimension: millimeters.
3.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
4.If there is any question with packing specification or packing method, please contact your local HSMC sales office.

Material:

- Lead: 42 Alloy; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: L94V-0



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