

GTM CORPORATION

ISSUED DATE :2004/08/19
REVISED DATE :2004/11/29B

GMPSA13

NPN SILICON DARLINGTON TRANSISTOR

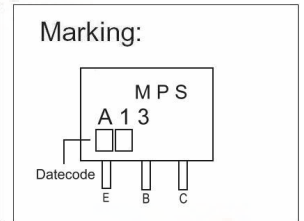
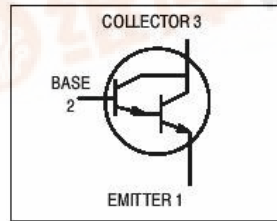
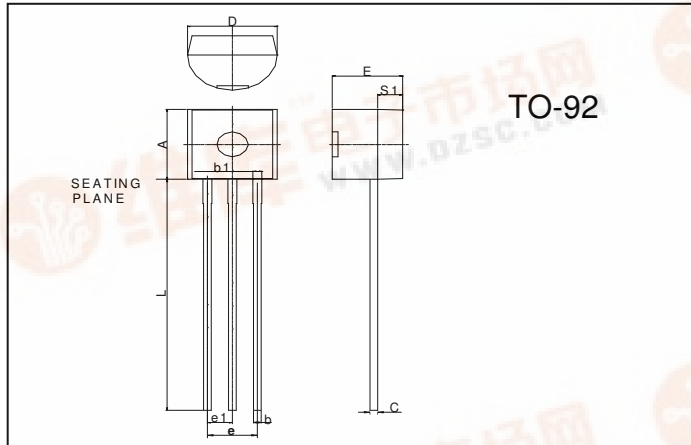
Description

The GMPSA13 is designed for darlington applications requiring extremely high current gain at collector to 500mA.

Features

- *High D.C. Current Gain
- *Complementary to GMPSA63

Package Dimensions



| REF. | Millimeter | | REF. | Millimeter | |
|------|------------|------|------|------------|-------|
| | Min. | Max. | | Min. | Max. |
| A | 4.45 | 4.7 | D | 4.44 | 4.7 |
| S1 | 1.02 | - | E | 3.30 | 3.81 |
| b | 0.36 | 0.51 | L | 12.70 | - |
| b1 | 0.36 | 0.76 | e1 | 1.150 | 1.390 |
| C | 0.36 | 0.51 | e | 2.42 | 2.66 |

Absolute Maximum Ratings at Ta = 25°C

| Parameter | Symbol | Ratings | Unit |
|------------------------------|--------|------------|------|
| Junction Temperature | Tj | +150 | °C |
| Storage Temperature | Tstg | -55 ~ +150 | °C |
| Collector to Base Voltage | VCBO | 30 | V |
| Collector to Emitter Voltage | VCES | 30 | V |
| Emitter to Base Voltage | VEBO | 10 | V |
| Collector Current | Ic | 500 | mA |
| Total Power Dissipation | PD | 625 | mW |

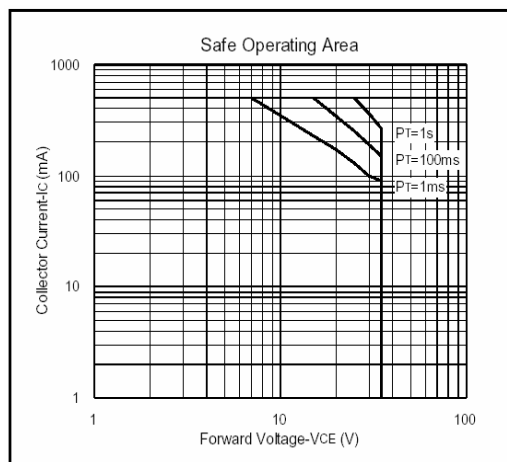
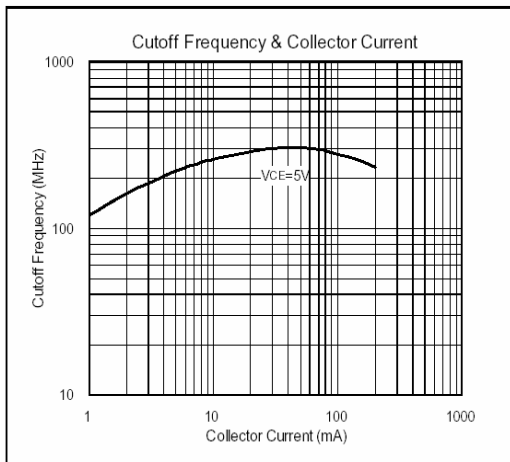
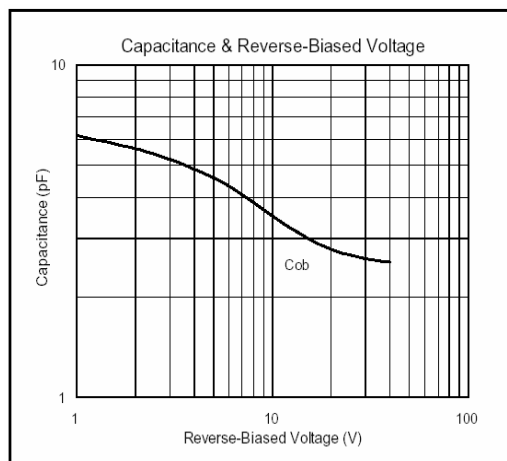
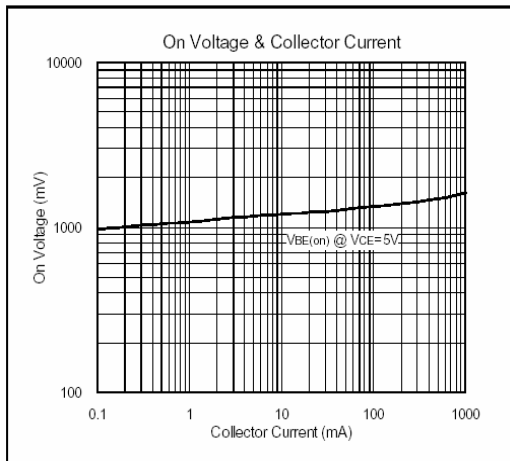
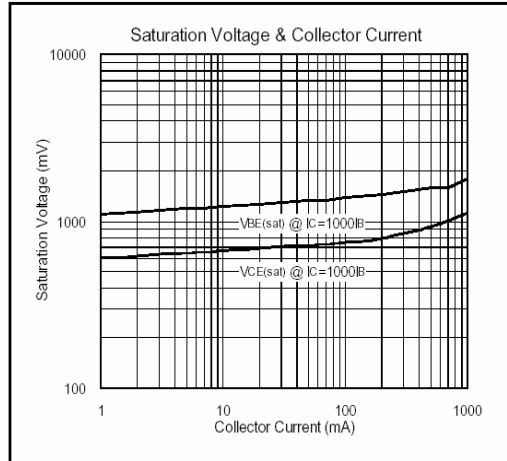
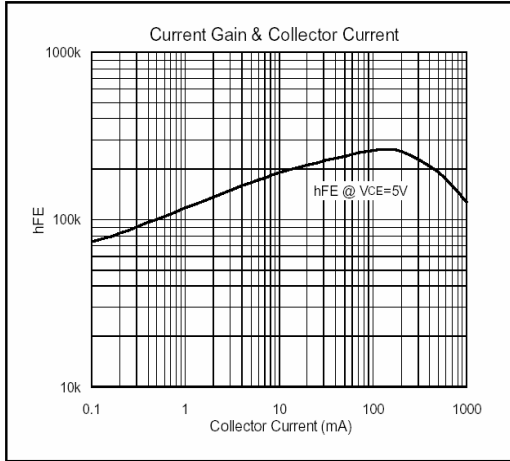
Characteristics at Ta = 25°C

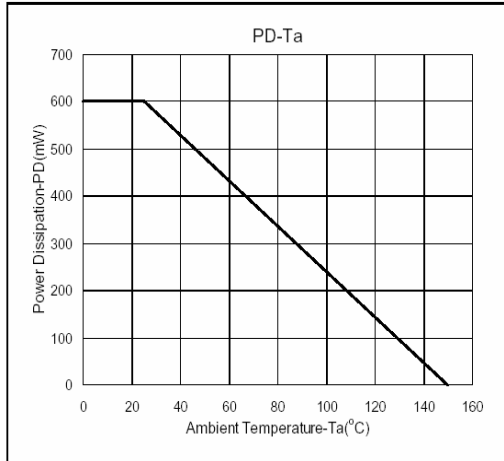
| Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|------------|------|------|------|------|---------------------------|
| BVCBO | 30 | - | - | V | Ic=100uA, IE=0 |
| BVCES | 30 | - | - | V | Ic=100uA, VBE=0 |
| BVEBO | 10 | - | - | V | IE=10uA, Ic=0 |
| IcBO | - | - | 100 | nA | VCB=30V, IE = 0 |
| IEBO | - | - | 100 | nA | VEB=10V, Ic = 0 |
| *VCE(sat)1 | - | - | 1.5 | V | Ic=100mA, Ib=0.1mA |
| *VCE(sat)2 | - | 1.0 | - | V | Ic=500mA, Ib=0.5mA |
| *hFE1 | 5 | - | - | K | VCE=5V, Ic=10mA |
| *hFE2 | 10 | - | - | K | VCE=5V, Ic=100mA |
| *hFE3 | - | 50 | - | K | VCE=5V, Ic=500mA |
| fT | 125 | - | - | MHz | VCE=5V, Ic=10mA, f=100MHz |
| Cob | - | - | 6 | pF | VCB=10V, IE = 0, f=1MHz |

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



Characteristics Curve





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Head Office And Factory:

- **Taiwan:** No. 17-1 Tatung Rd. Fu Kou Hsin-Chu Industrial Park, Hsin-Chu, Taiwan, R. O. C.
TEL : 886-3-597-7061 FAX : 886-3-597-9220, 597-0785
- **China:** (201203) No.255, Jang-Jiang Tsai-Lueng RD. , Pu-Dung-Hsin District, Shang-Hai City, China
TEL : 86-21-5895-7671 ~ 4 FAX : 86-21-38950165