

# MPS750 / 751

## PNP Silicon Epitaxial Planar Transistor

for switching and amplifier applications.



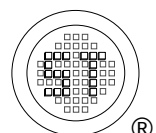
1. Emitter 2. Base 3. Collector  
TO-92 Plastic Package

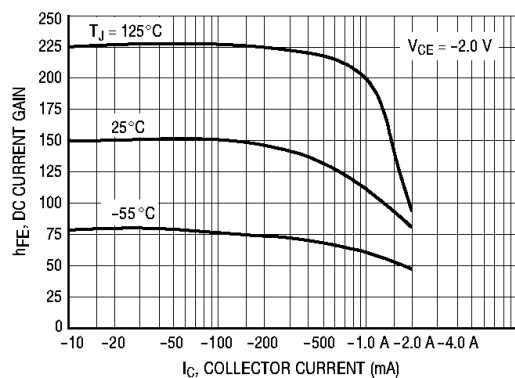
### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

| Parameter                 | Symbol                         | Value         | Unit             |
|---------------------------|--------------------------------|---------------|------------------|
| Collector Base Voltage    | MPS750<br>MPS751<br>$-V_{CBO}$ | 60<br>80      | V                |
| Collector Emitter Voltage | MPS750<br>MPS751<br>$-V_{CEO}$ | 40<br>60      | V                |
| Emitter Base Voltage      | $-V_{EBO}$                     | 5             | V                |
| Collector Current         | $-I_C$                         | 2             | A                |
| Power Dissipation         | $P_{tot}$                      | 625           | mW               |
| Junction Temperature      | $T_j$                          | 150           | $^\circ\text{C}$ |
| Storage Temperature Range | $T_{stg}$                      | - 55 to + 150 | $^\circ\text{C}$ |

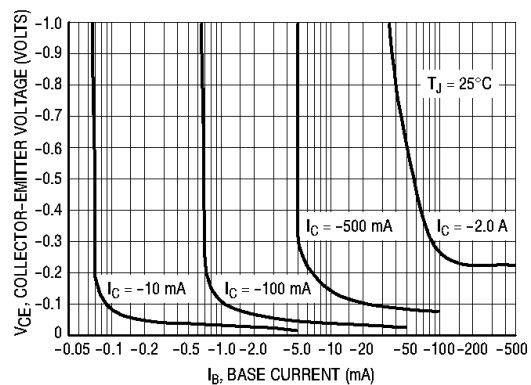
### Characteristics at $T_a = 25^\circ\text{C}$

| Parameter                                                                                                                                                                                                                        | Symbol                                       | Min.                 | Max.             | Unit             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|----------------------|------------------|------------------|
| DC Current Gain<br>at $-V_{CE} = 2\text{ V}$ , $-I_C = 50\text{ mA}$<br>at $-V_{CE} = 2\text{ V}$ , $-I_C = 500\text{ mA}$<br>at $-V_{CE} = 2\text{ V}$ , $-I_C = 1\text{ A}$<br>at $-V_{CE} = 2\text{ V}$ , $-I_C = 2\text{ A}$ | $h_{FE}$<br>$h_{FE}$<br>$h_{FE}$<br>$h_{FE}$ | 75<br>75<br>75<br>40 | -<br>-<br>-<br>- | -<br>-<br>-<br>- |
| Collector Base Cutoff Current<br>at $-V_{CB} = 60\text{ V}$<br>at $-V_{CB} = 80\text{ V}$                                                                                                                                        | MPS750<br>MPS751<br>$-I_{CBO}$               | -<br>-               | 100<br>100       | nA               |
| Emitter Base Cutoff Current<br>at $-V_{EB} = 4\text{ V}$                                                                                                                                                                         | $-I_{EBO}$                                   | -                    | 100              | nA               |
| Collector Base Breakdown Voltage<br>at $-I_C = 100\text{ }\mu\text{A}$                                                                                                                                                           | MPS750<br>MPS751<br>$-V_{(BR)CBO}$           | 60<br>80             | -<br>-           | V                |
| Collector Emitter Breakdown Voltage<br>at $-I_C = 10\text{ mA}$                                                                                                                                                                  | MPS750<br>MPS751<br>$-V_{(BR)CEO}$           | 40<br>60             | -<br>-           | V                |
| Emitter Base Breakdown Voltage<br>at $-I_E = 10\text{ }\mu\text{A}$                                                                                                                                                              | $-V_{(BR)EBO}$                               | 5                    | -                | V                |
| Collector Emitter Saturation Voltage<br>at $-I_C = 1\text{ A}$ , $-I_B = 100\text{ mA}$<br>at $-I_C = 2\text{ A}$ , $-I_B = 200\text{ mA}$                                                                                       | $-V_{CE(sat)}$                               | -<br>-               | 0.3<br>0.5       | V                |
| Base Emitter Saturation Voltage<br>at $-I_C = 1\text{ A}$ , $-I_B = 100\text{ mA}$                                                                                                                                               | $-V_{BE(sat)}$                               | -                    | 1.2              | V                |
| Base Emitter On Voltage<br>at $-I_C = 1\text{ A}$ , $-V_{CE} = 2\text{ V}$                                                                                                                                                       | $-V_{BE(on)}$                                | -                    | 1                | V                |
| Gain Bandwidth Product<br>at $-V_{CE} = 5\text{ V}$ , $-I_C = 50\text{ mA}$ , $f = 100\text{ MHz}$                                                                                                                               | $f_T$                                        | 75                   | -                | MHz              |

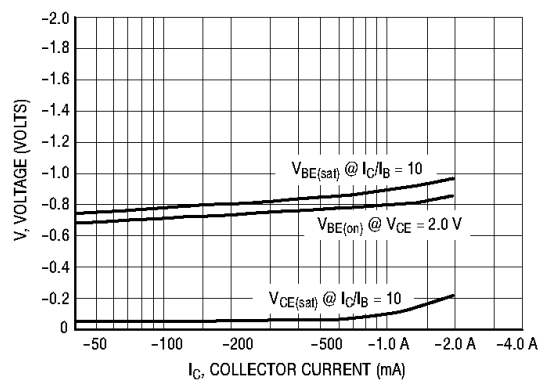




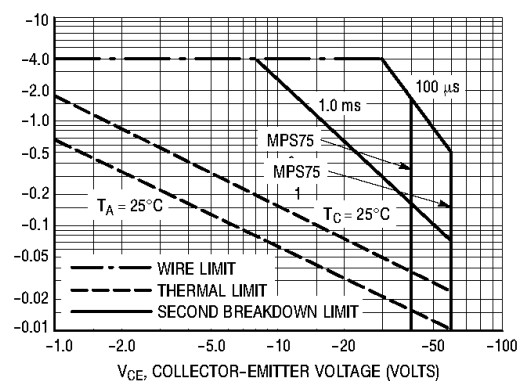
Typical DC Current Gain



Collector Saturation Region



On Voltages



Safe Operating Area

