

THERMAL DATA

| | | | | |
|-----------------------|-------------------------------------|-----|------|------|
| R _{thj-case} | Thermal Resistance Junction-Case | Max | 1.78 | °C/W |
| R _{thj-amb} | Thermal Resistance Junction-Ambient | Max | 62.5 | °C/W |

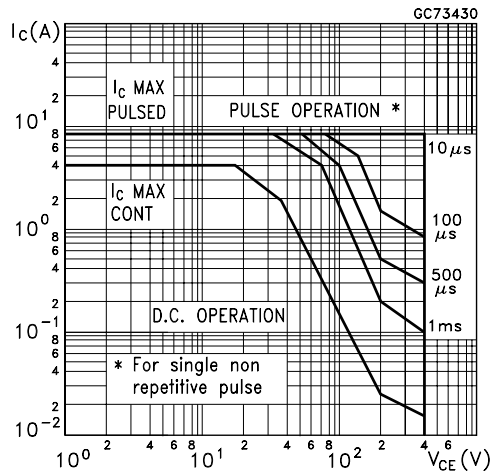
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|----------------------------------|---|--|----------------|------------|----------------------|------------------|
| I _{CES} | Collector Cut-off Current (V _{BE} = -1.5 V) | V _{CE} = 700 V V _{CE} = 700 V T _J = 125 °C | | | 100 500 | μA μA |
| V _{EBO} | Emitter-Base Voltage (I _C = 0) | I _E = 10 mA | 9 | | | V |
| V _{CEO(sus)*} | Collector-Emitter Sustaining Voltage (I _B = 0) | I _C = 100 mA L = 25 mH | 400 | | | V |
| I _{CEO} | Collector Cut-Off Current (I _B = 0) | V _{CE} = 400 V | | | 250 | μA |
| V _{CE(sat)*} | Collector-Emitter Saturation Voltage | I _C = 0.5 A I _B = 0.1 A I _C = 1 A I _B = 0.2 A I _C = 2.5 A I _B = 0.5 A I _C = 4 A I _B = 1 A | | 0.5 | 0.7 1 1.5 V | V V V V |
| V _{BE(sat)*} | Base-Emitter Saturation Voltage | I _C = 0.5 A I _B = 0.1 A I _C = 1 A I _B = 0.2 A I _C = 2.5 A I _B = 0.5 A | | | 1.1 1.2 1.3 | V V V |
| h _{FE} * | DC Current Gain | I _C = 10 mA V _{CE} = 5 V I _C = 2 A V _{CE} = 5 V Group A Group B | 10 14 25 | | 28 40 | |
| t _s t _f | RESISTIVE LOAD Storage Time Fall Time | V _{CC} = 125 V I _C = 2 A I _{B1} = 0.4 A I _{B2} = -0.4 A T _p = 30 μs (see fig.2) | 1.5 | 0.2 | 3 0.4 | μs μs |
| t _s t _f | INDUCTIVE LOAD Storage Time Fall Time | I _C = 2 A I _{B1} = 0.4 A V _{BE(off)} = -5 V R _{BB} = 0 Ω V _{clamp} = 200 V (see fig.1) | | 0.6 0.1 | 1 0.2 | μs μs |

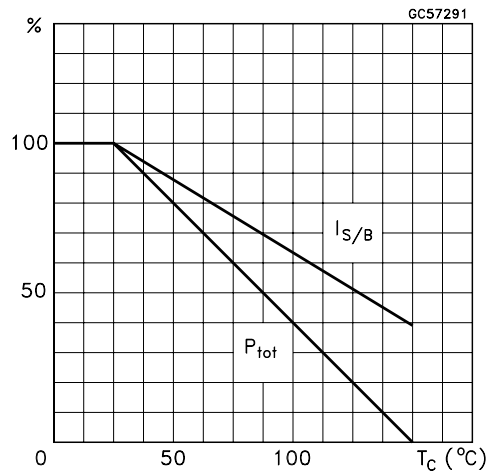
* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

Note : Product is pre-selected in DC current gain (GROUP A and GROUP B). STMicroelectronics reserves the right to ship either groups according to production availability. Please contact your nearest STMicroelectronics sales office for delivery details.

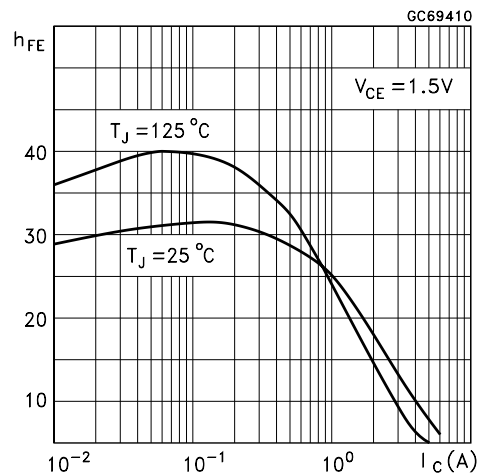
Safe Operating Areas



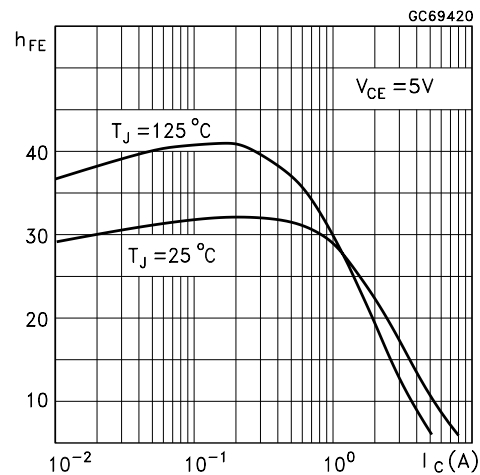
Derating Curve



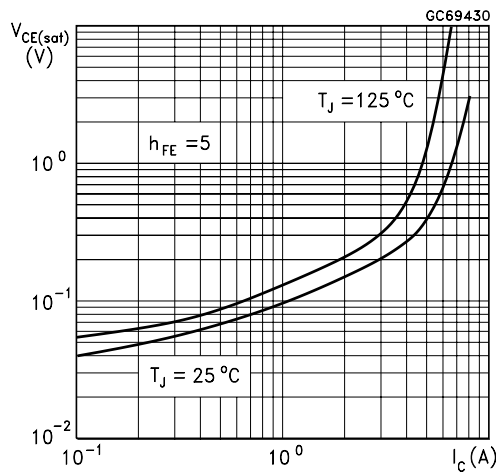
DC Current Gain



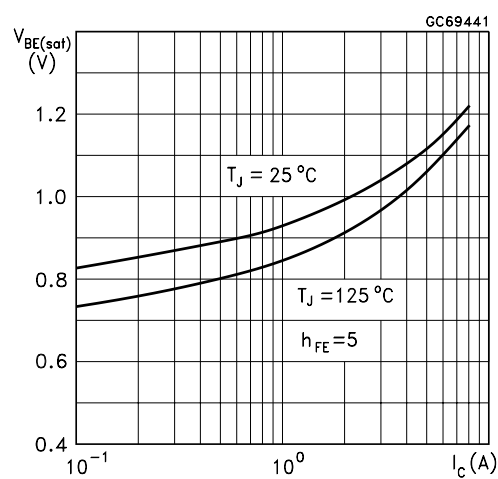
DC Current Gain



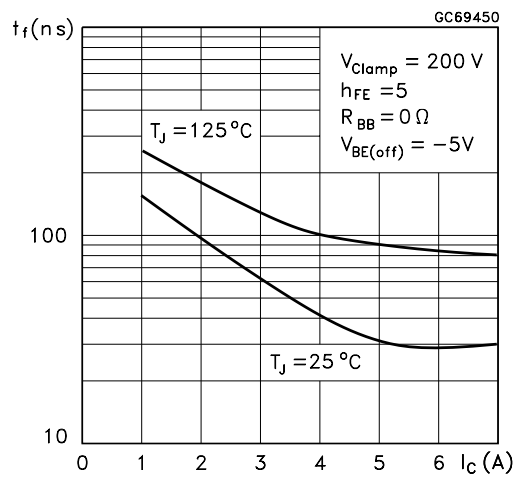
Collector Emitter Saturation Voltage



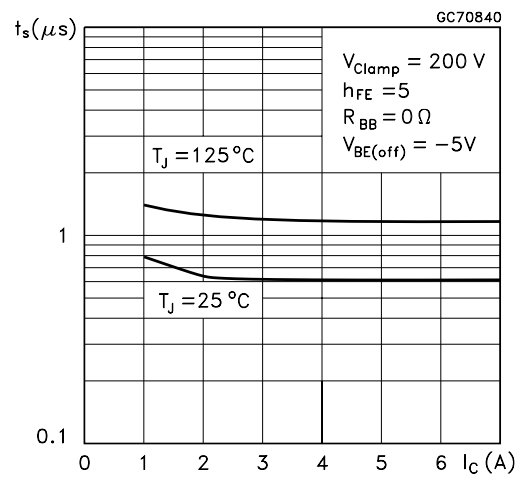
Base Emitter Saturation Voltage



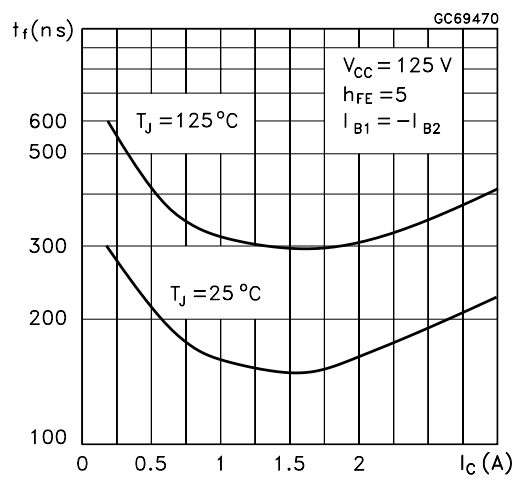
Inductive Load Fall Time



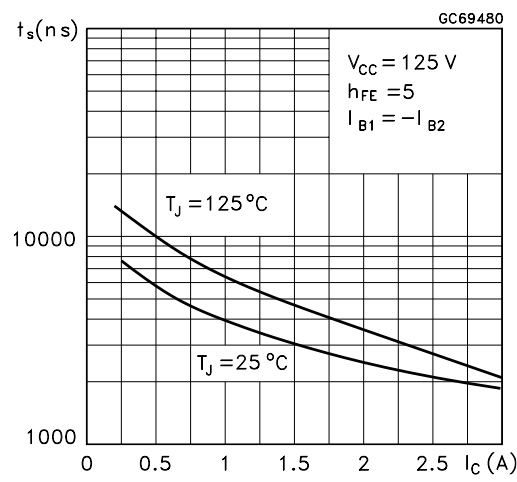
Inductive Load Storage Time



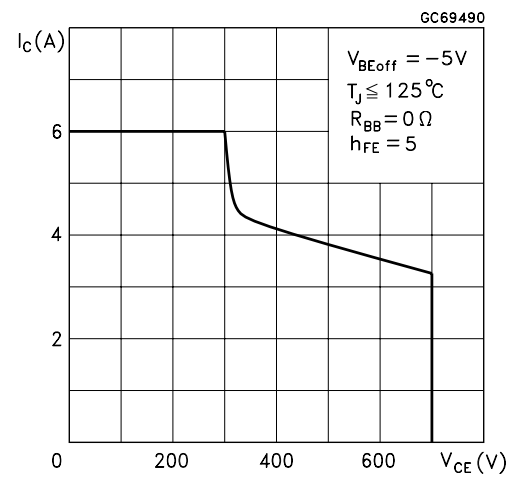
Resistive Load Fall Time



Resistive Load Storage Time

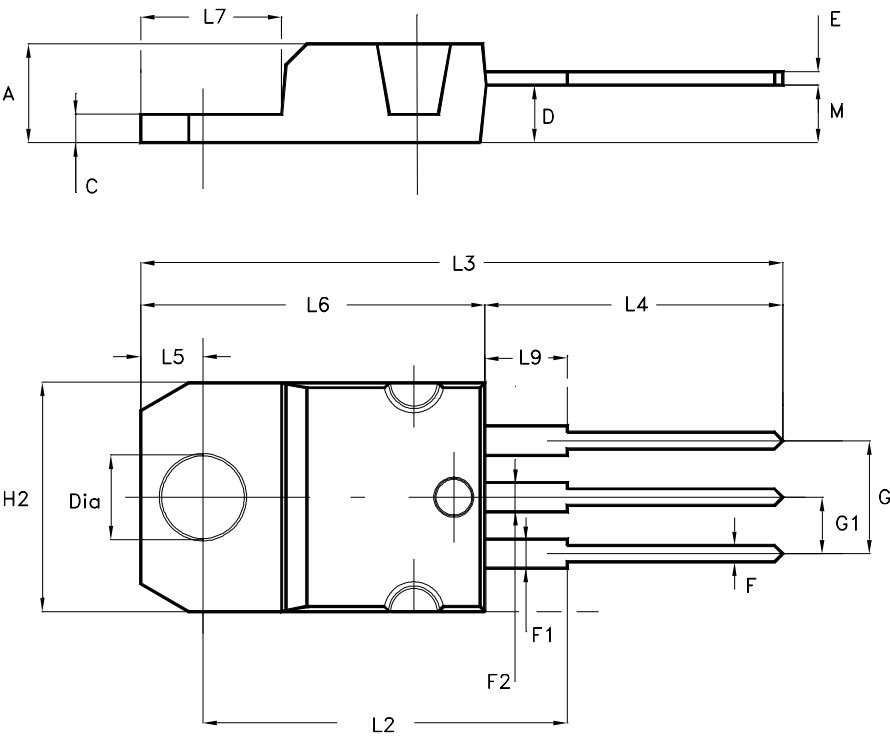


Reverse Biased SOA



TO-220 MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|-------|-------|-------|-------|-------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | 4.40 | | 4.60 | 0.173 | | 0.181 |
| C | 1.23 | | 1.32 | 0.048 | | 0.052 |
| D | 2.40 | | 2.72 | 0.094 | | 0.107 |
| E | 0.49 | | 0.70 | 0.019 | | 0.027 |
| F | 0.61 | | 0.88 | 0.024 | | 0.034 |
| F1 | 1.14 | | 1.70 | 0.044 | | 0.067 |
| F2 | 1.14 | | 1.70 | 0.044 | | 0.067 |
| G | 4.95 | | 5.15 | 0.194 | | 0.202 |
| G1 | 2.40 | | 2.70 | 0.094 | | 0.106 |
| H2 | 10.00 | | 10.40 | 0.394 | | 0.409 |
| L2 | | 16.40 | | | 0.645 | |
| L4 | 13.00 | | 14.00 | 0.511 | | 0.551 |
| L5 | 2.65 | | 2.95 | 0.104 | | 0.116 |
| L6 | 15.25 | | 15.75 | 0.600 | | 0.620 |
| L7 | 6.20 | | 6.60 | 0.244 | | 0.260 |
| L9 | 3.50 | | 3.93 | 0.137 | | 0.154 |
| M | | 2.60 | | | 0.102 | |
| DIA. | 3.75 | | 3.85 | 0.147 | | 0.151 |



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