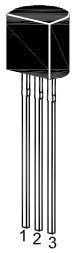
13003H

NPN Silicon Epitaxial Planar Transistor

for high voltage and high speed switching applications



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

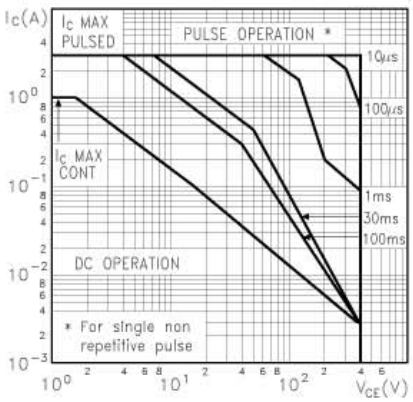
Absolute Maximum Ratings (T_a = 25℃)

Parameter	Symbol	Value	Unit
Collector Emitter Voltage	V_{CES}	900	V
Collector Emitter Voltage	V_{CEO}	500	V
Emitter Base Voltage	V_{EBO}	9	V
Collector Current (f ≥ 100 Hz, Duty cycle ≤ 50 %)	I_C	1.5	A
Collector Current (tp < 5 ms)	I_{CP}	3	A
Total Power Dissipation	P_{tot}	1.5	W
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	- 65 to + 150	℃

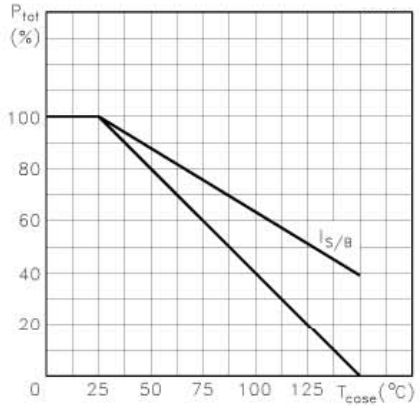
Characteristics at T_a = 25℃

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at V_{CE} = 2 V, I_C = 0.5 A at V_{CE} = 2 V, I_C = 1 A	 h_{FE} h_{FE}	 8 5	 35 25	 - -
Collector Emitter Cutoff Current at V_{CE} = 900 V	I_{CES}	-	1	mA
Collector Emitter Breakdown Voltage at I_C = 10 mA	$V_{(BR)CEO}$	500	-	V
Emitter Base Breakdown Voltage at I_E = 10 mA	$V_{(BR)EBO}$	9	18	V
Collector Emitter Saturation Voltage at I_C = 0.5 A, I_B = 0.1 A at I_C = 1 A, I_B = 0.25 A at I_C = 1.5 A, I_B = 0.5 A	$V_{CE(sat)}$	 - - -	 0.5 1 1.5	V
Base Emitter Saturation Voltage at I_C = 0.5 A, I_B = 0.1 A at I_C = 1 A, I_B = 0.25 A	$V_{BE(sat)}$	 - -	 1 1.2	V
Rise Time at V_{CC} = 125 V, I_C = 1 A, I_B = -I_{B2} = 0.2 A, t_p = 25 µs	t_{on}	-	1	µs
Storage Time at V_{CC} = 125 V, I_C = 1 A, I_B = -I_{B2} = 0.2 A, t_p = 25 µs	t_s	-	4	µs
Fall Time at V_{CC} = 125 V, I_C = 1 A, I_B = -I_{B2} = 0.2 A, t_p = 25 µs	t_f	-	0.7	µs

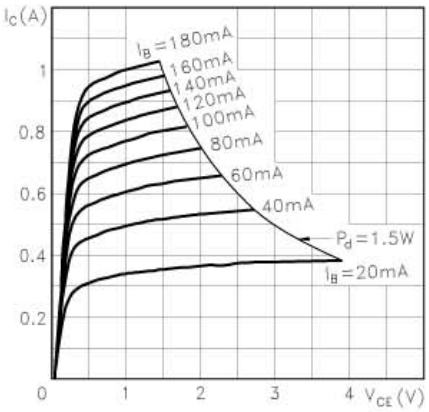
Safe Operating Area



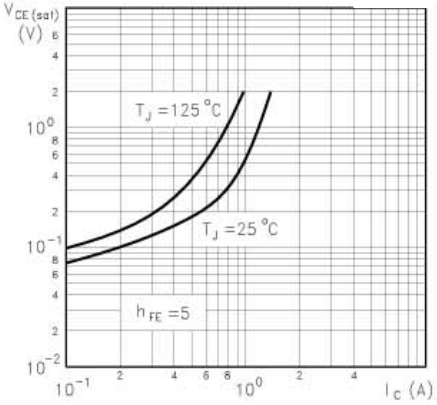
Derating Curve



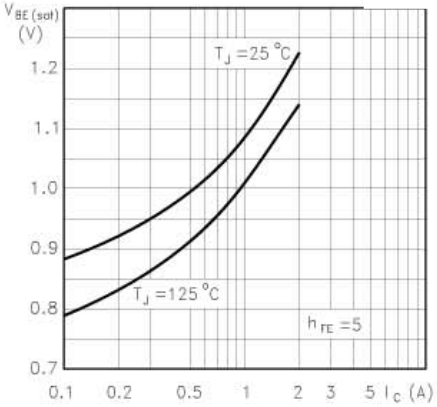
Output Characteristics



Collector-Emitter Saturation Voltage



Base-Emitter Saturation Voltage



DC Current Gain