

Silicon NPN Power Transistor

2SC3834

DESCRIPTION

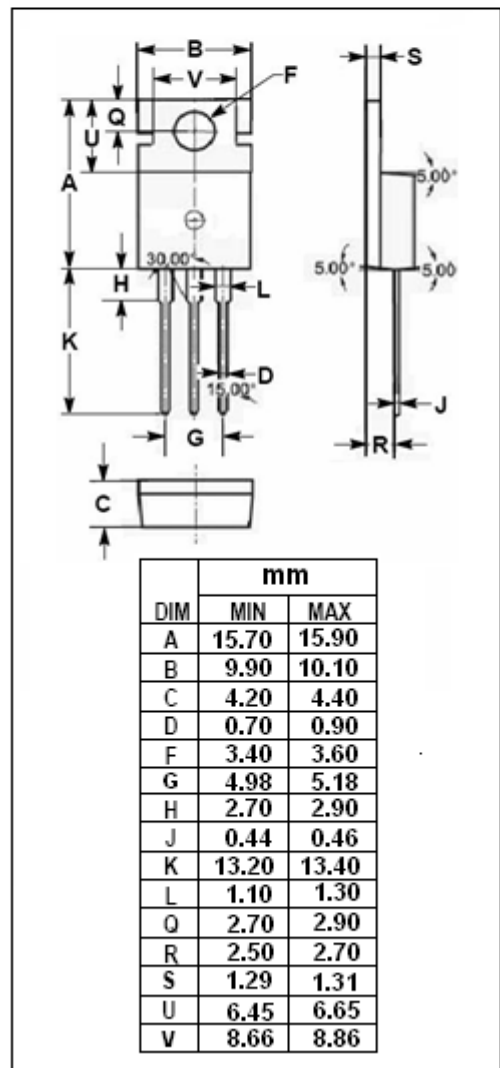
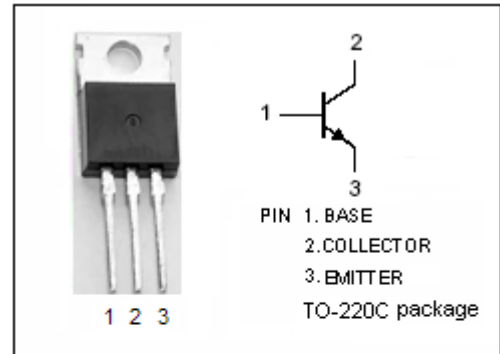
- Low Collector Saturation Voltage
: $V_{CE(sat)} = 0.5V(\text{Max}) @ I_C = 3A$
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 120V (\text{Min})$
- Good Linearity of h_{FE}

APPLICATIONS

- Designed for use in humidifier , DC/DC converter and general purpose applications

ABSOLUTE MAXIMUM RATINGS($T_a=25$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	200	V
V_{CEO}	Collector-Emitter Voltage	120	V
V_{EBO}	Emitter-Base Voltage	8	V
I_C	Collector Current-Continuous	7	A
I_{CM}	Collector Current-Pulse	14	A
I_B	Base Current-Continuous	3	A
P_C	Collector Power Dissipation @ $T_C=25$	50	W
T_J	Junction Temperature	150	
T_{stg}	Storage Temperature Range	-55~150	



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ELECTRICAL CHARACTERISTICS

 $T_C=25$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=50mA; I_B=0$	120			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=3A; I_B=0.3A$			0.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=3A; I_B=0.3A$			1.2	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=200V; I_E=0$			100	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=8V; I_C=0$			100	μA
h_{FE}	DC Current Gain	$I_C=3A; V_{CE}=4V$	70		220	
f_T	Current-Gain—Bandwidth Product	$I_E=-0.5A; V_{CE}=12V$		30		MHz
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=10V; f_{test}=1.0MHz$		110		pF

Switching times

t_{on}	Turn-on Time	$I_C=3A; I_{B1}=0.3A; I_{B2}=-0.6A$ $R_L=16.7; V_{CC}=50V$			0.5	μs
t_{stg}	Storage Time				3.0	μs
t_f	Fall Time				0.5	μs

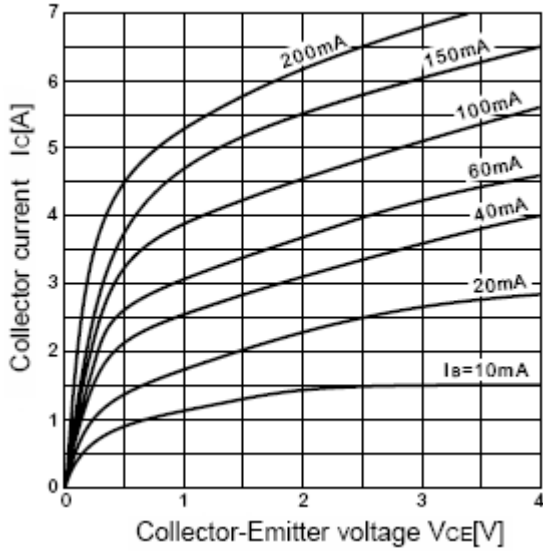
◆ h_{FE} Classifications

O	Y	G
70-120	100-200	160-220

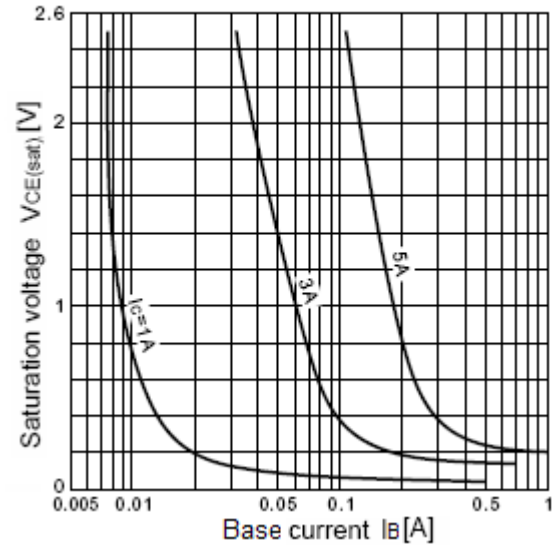
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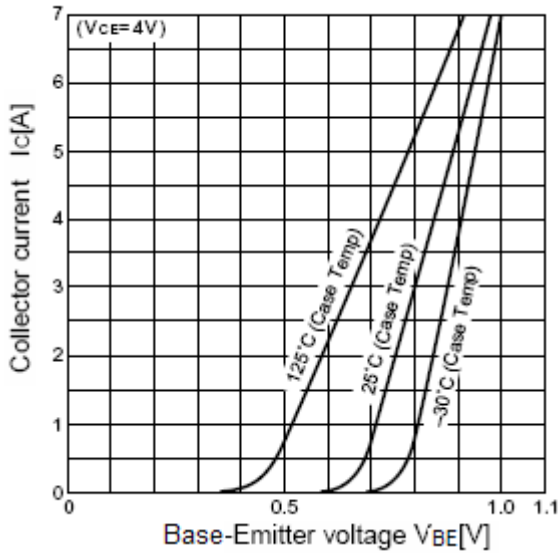
I_C - V_{CE} Characteristics



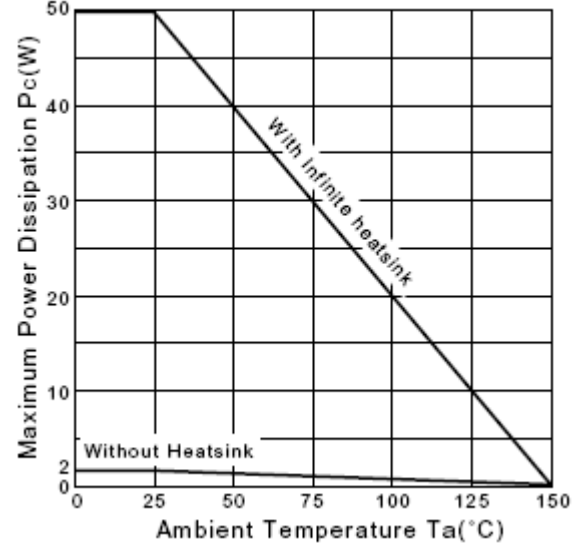
$V_{CE(sat)}$ - I_B Characteristics



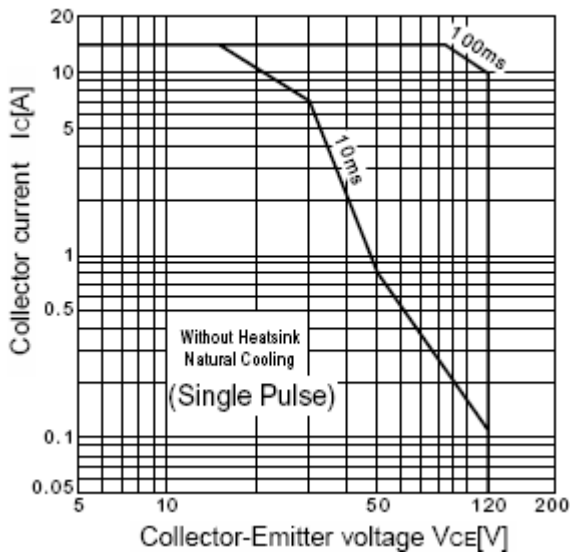
I_C - V_{BE} Characteristics



Power Derating



Safe Operating Area



h_{FE} - I_C Characteristics

