

isc Silicon NPN Power Transistor

2SC3835G

DESCRIPTION

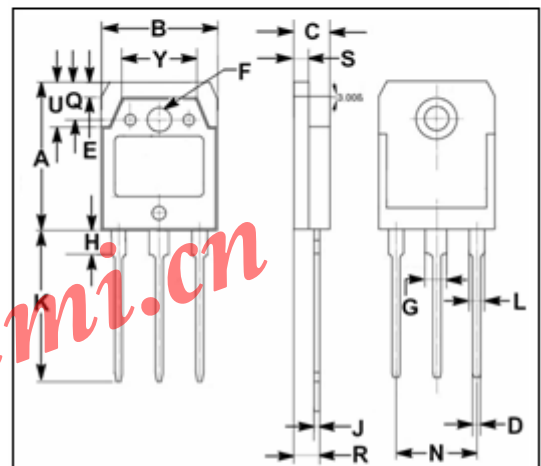
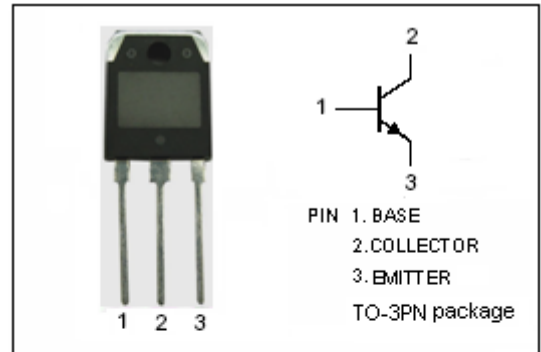
- Low Collector Saturation Voltage  
:  $V_{CE(sat)} = 0.5V(\text{Max}) @ I_C = 3A$
- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 120V (\text{Min})$
- Good Linearity of  $h_{FE}$

APPLICATIONS

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

ABSOLUTE MAXIMUM RATINGS( $T_a = 25^\circ C$ )

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 @ $T_C = 25^\circ C$	70	W
$T_J$	Junction Temperature	150	$^\circ C$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ C$



DIM	mm	
	MIN	MAX
A	19.90	20.10
B	15.50	15.70
C	4.70	4.90
D	0.90	1.10
E	1.90	2.10
F	3.40	3.60
G	2.90	3.10
H	3.20	3.40
J	0.595	0.605
K	20.50	20.70
L	1.90	2.10
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.005
U	5.90	6.10
Y	9.90	10.10

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## ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=50\text{mA}; I_B=0$	120			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.3\text{A}$			0.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.3\text{A}$			1.2	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=200\text{V}; I_E=0$			100	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=8\text{V}; I_C=0$			100	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$I_C=3\text{A}; V_{CE}=4\text{V}$	160		220	
$f_T$	Current-Gain—Bandwidth Product	$I_E=-0.5\text{A}; V_{CE}=12\text{V}$		30		MHz
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{res}=1.0\text{MHz}$		110		pF

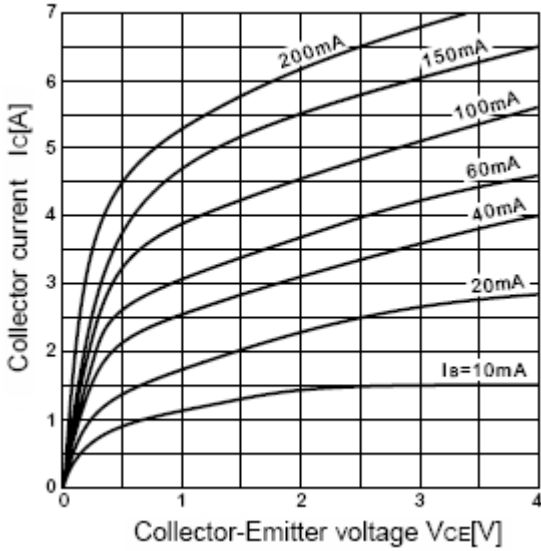
## Switching times

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

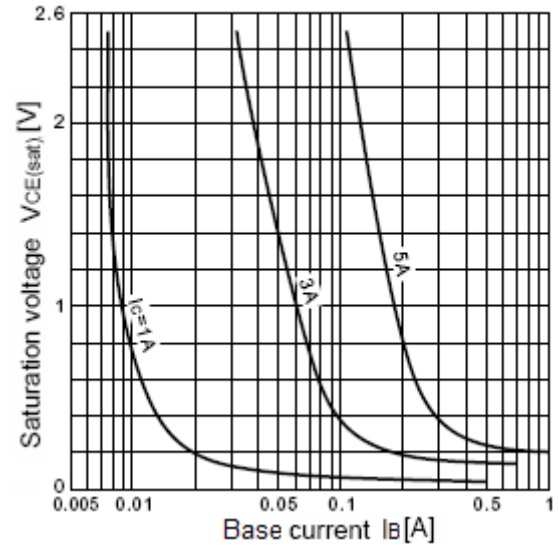
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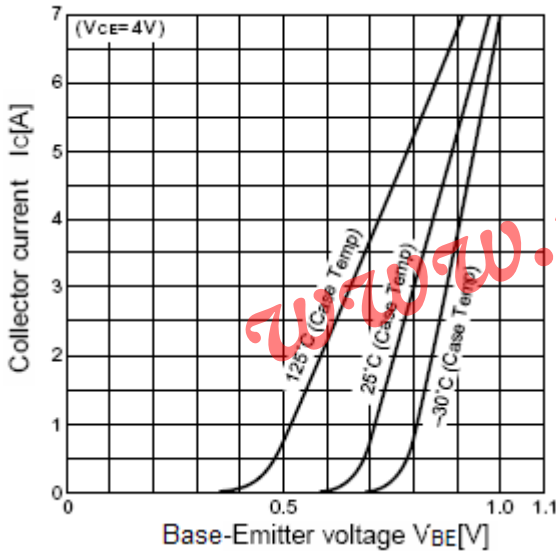
**$I_C$ - $V_{CE}$  Characteristics**



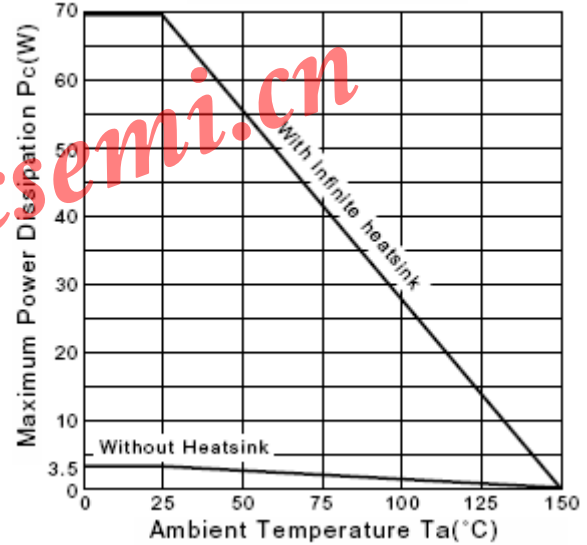
**$V_{CE(sat)}$ - $I_B$  Characteristics**



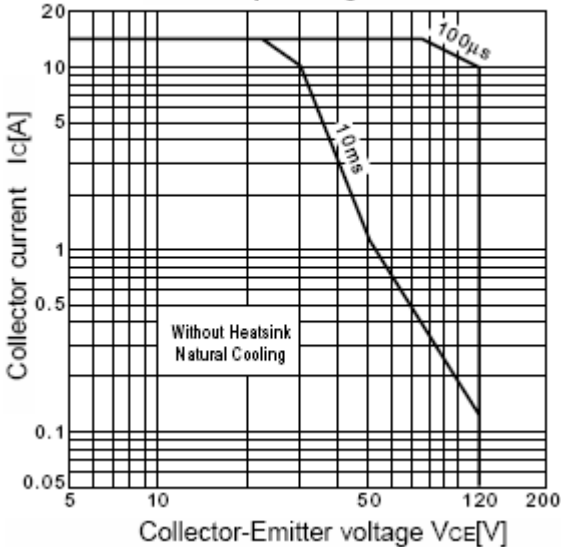
**$I_C$ - $V_{BE}$  Characteristics**



**Power Derating**



**Safe Operating Area**



**$h_{FE}$ - $I_C$  Characteristics**

