

isc Silicon NPN Power Transistor

2SC3856-P

DESCRIPTION

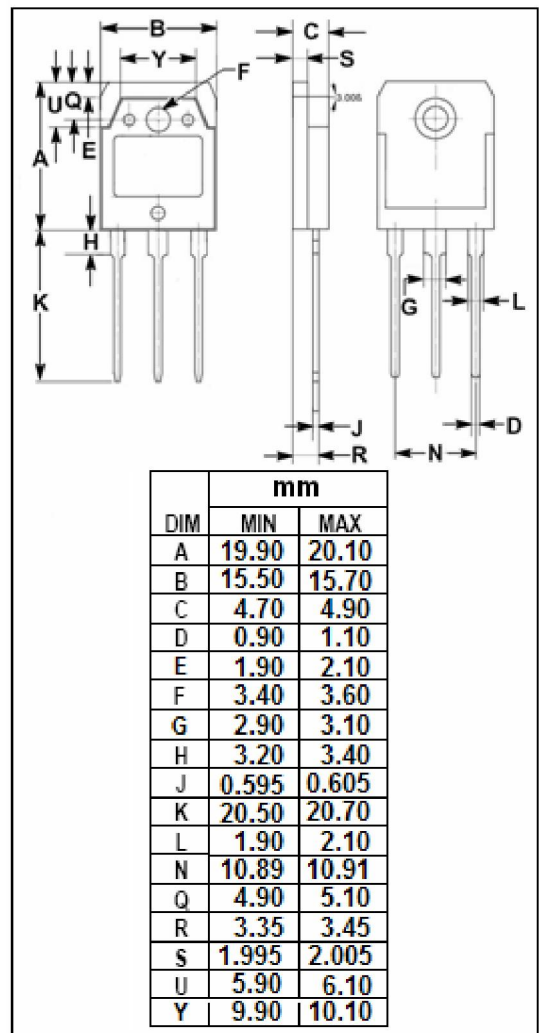
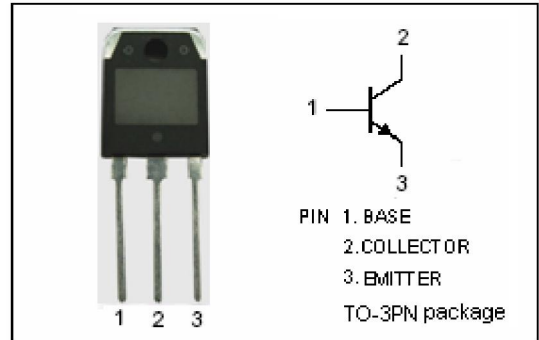
- High Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO}=180V(\text{Min})$
- Good Linearity of  $h_{FE}$

APPLICATIONS

- Designed for audio and general purpose applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	200	V
$V_{CEO}$	Collector-Emitter Voltage	180	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	15	A
$I_B$	Base Current-Continuous	4	A
$P_C$	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	130	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



**isc Silicon NPN Power Transistor****2SC3856-P****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	$I_C=50\text{mA}; I_B=0$	180			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=5.0\text{A}; I_B=0.5\text{A}$			2.0	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=200\text{V}; I_E=0$			100	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=6\text{V}; I_C=0$			100	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$I_C=3\text{A}; V_{CE}=4\text{V}$	70		140	
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1.0\text{MHz}$		300		pF
$f_T$	Current-Gain—Bandwidth Product	$I_E=-0.5\text{A}; V_{CE}=12\text{V}$		20		MHz

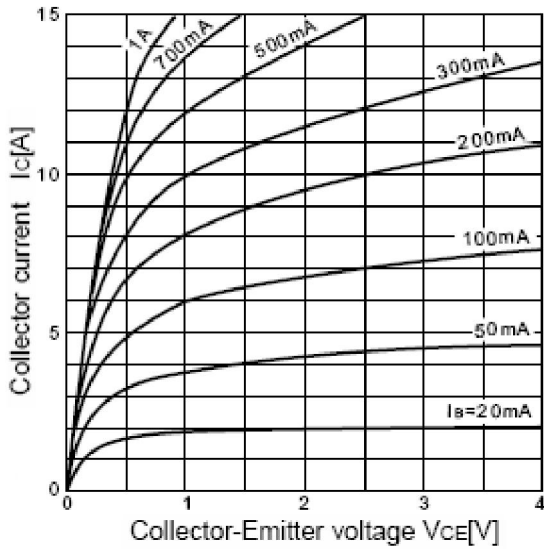
## Switching times

$t_{on}$	Turn-on Time	$I_C=10\text{A}, R_L=4\Omega,$ $I_{B1}=-I_{B2}=1\text{A}, V_{CC}=40\text{V}$		0.5		$\mu\text{s}$
$t_{stg}$	Storage Time			1.8		$\mu\text{s}$
$t_f$	Fall Time			0.6		$\mu\text{s}$

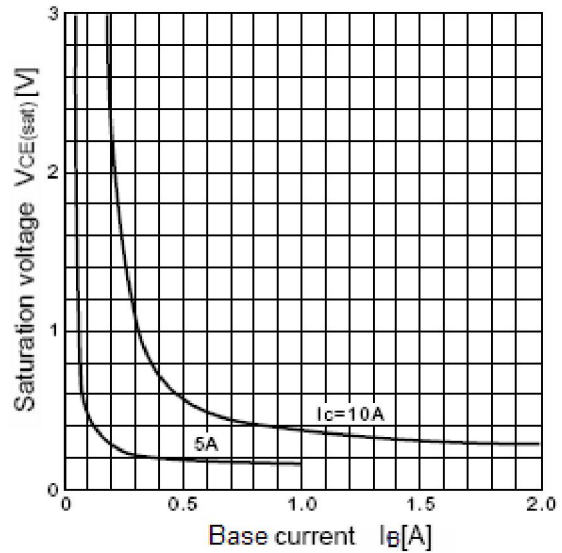
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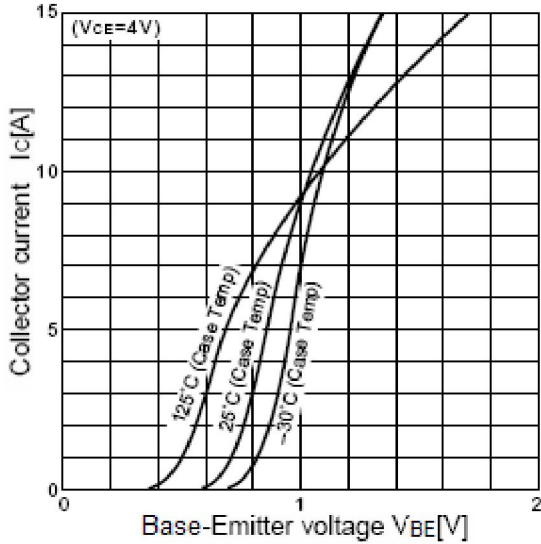
**$I_c-V_{CE}$  Characteristics**



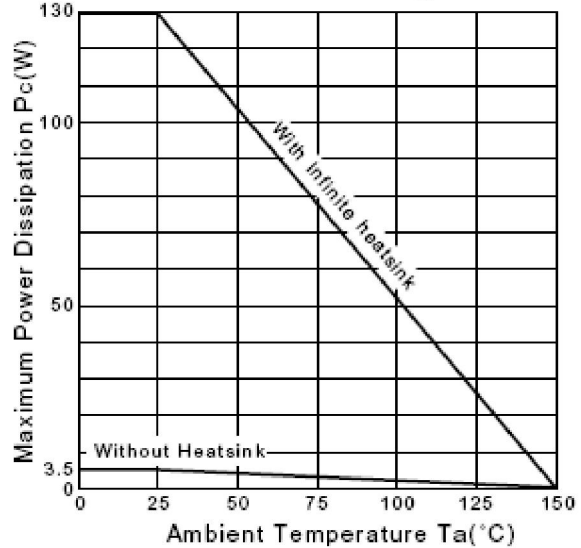
**$V_{CE(sat)}-I_B$  Characteristics**



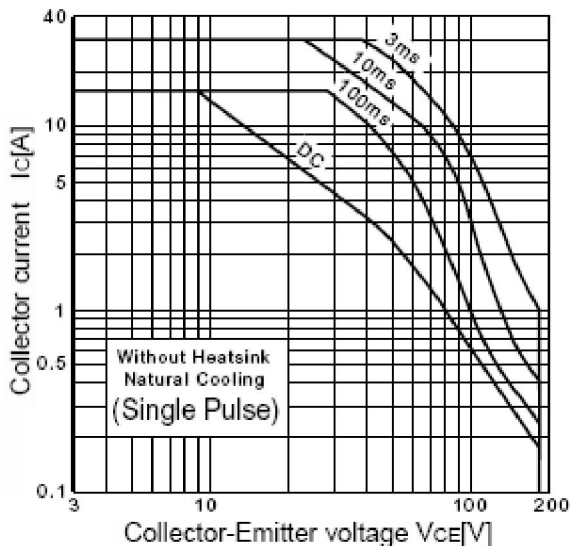
**$I_c-V_{BE}$  Characteristics**



**Power Derating**



**Safe Operating Area**



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

