

isc Silicon NPN Power Transistor

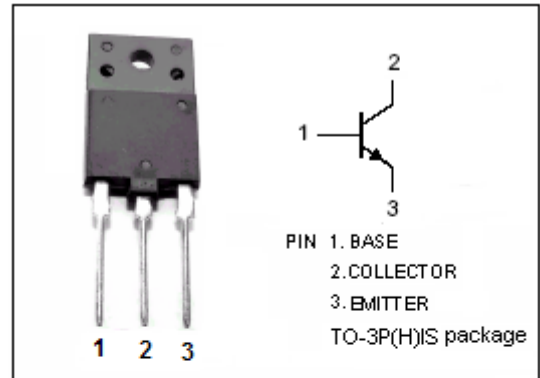
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DESCRIPTION

- High Breakdown Voltage-  
:  $V_{CBO} = 1500V$  (Min)
- High Switching Speed
- Low Saturation Voltage

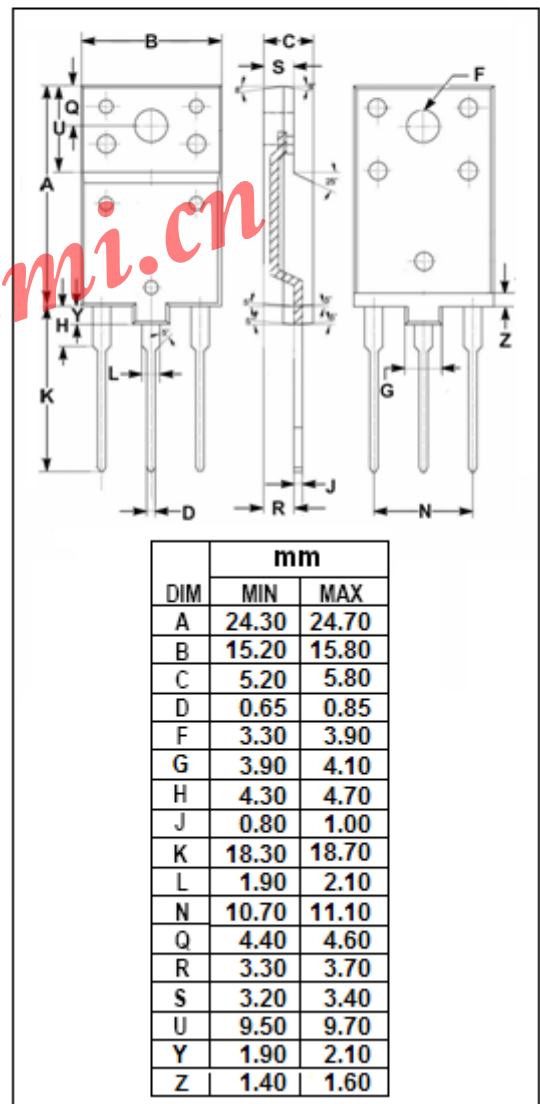
APPLICATIONS

- Horizontal deflection output for high resolution display.
- High speed switching power supply output applications



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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	1500	V
$V_{CEO}$	Collector-Emitter Voltage	600	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current- Continuous	8	A
$I_{CP}$	Collector Current-Pulse	16	A
$I_B$	Base Current- Continuous	4	A
$P_C$	Collector Power Dissipation @ $T_C=25^{\circ}C$	50	W
$T_J$	Junction Temperature	150	$^{\circ}C$
$T_{stg}$	Storage Temperature Range	-55~150	$^{\circ}C$



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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	$I_C=5\text{mA}; I_B=0$	600			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=1.5\text{A}$			5.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=1.5\text{A}$			1.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=1500\text{V}; I_E=0$			1.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			10	$\mu\text{A}$
$h_{FE-1}$	DC Current Gain	$I_C=1\text{A}; V_{CE}=5\text{V}$	8			
$h_{FE-2}$	DC Current Gain	$I_C=6\text{A}; V_{CE}=5\text{V}$	4		8	
$f_T$	Current-Gain—Bandwidth Product	$I_C=0.1\text{A}; V_{CE}=10\text{V}$	1	3		MHz
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{\text{test}}=1.0\text{MHz}$		175		pF

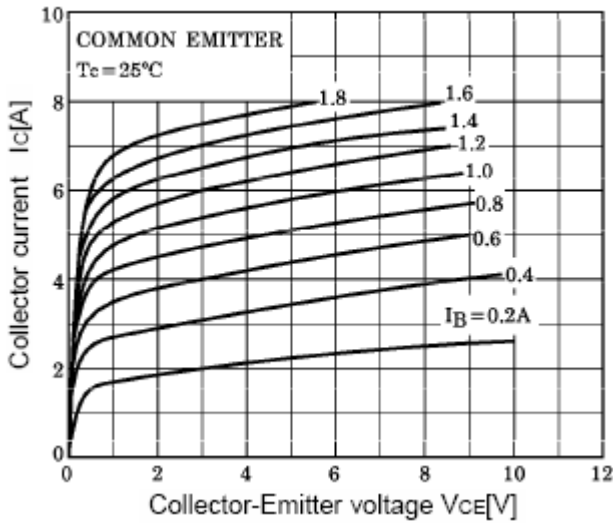
Switching times, Resistive load

$t_{stg}$	Storage Time	$I_C=6\text{A}, I_{B1}=1.2\text{A}; I_{B2}=-2.4\text{A}$ $R_L=32\ \Omega$			2.5	$\mu\text{s}$
$t_f$	Fall Time				0.2	$\mu\text{s}$

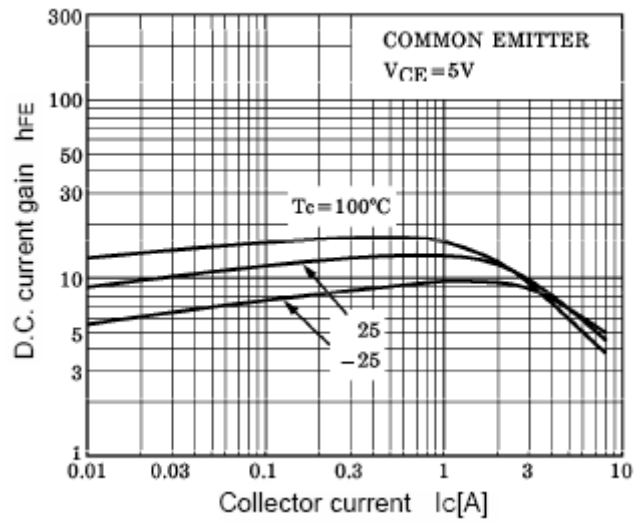
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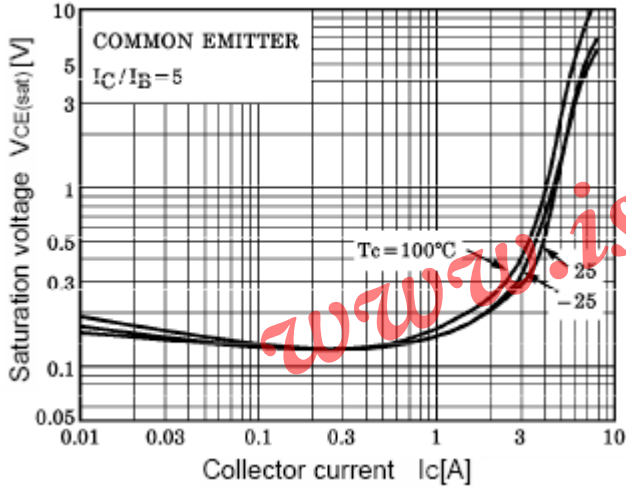
**$I_C$ - $V_{CE}$  Characteristics**



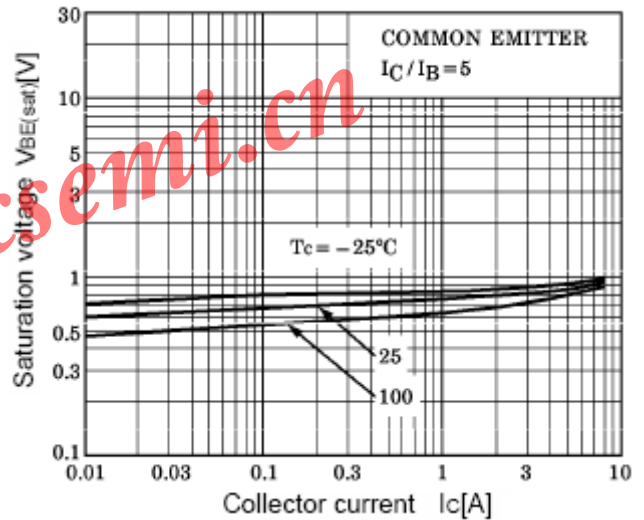
**$h_{FE}$ - $I_C$  Characteristics**



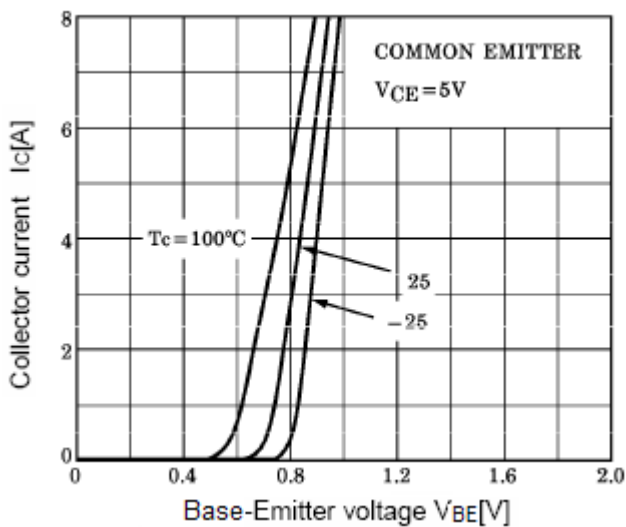
**$V_{CE(sat)}$ - $I_C$  Characteristics**



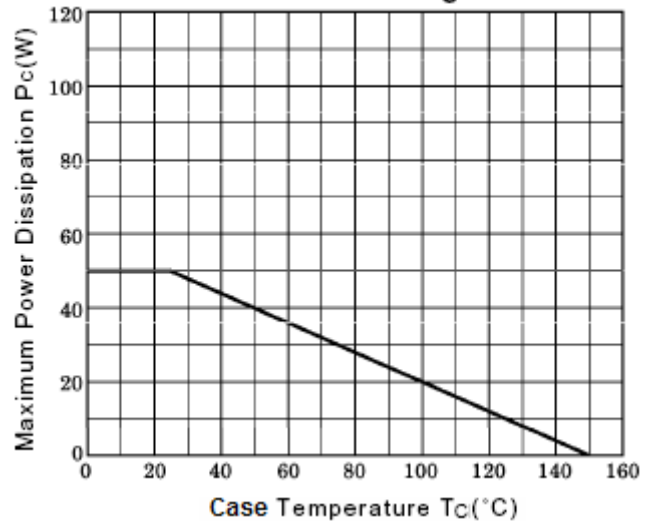
**$V_{BE(sat)}$ - $I_C$  Characteristics**



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

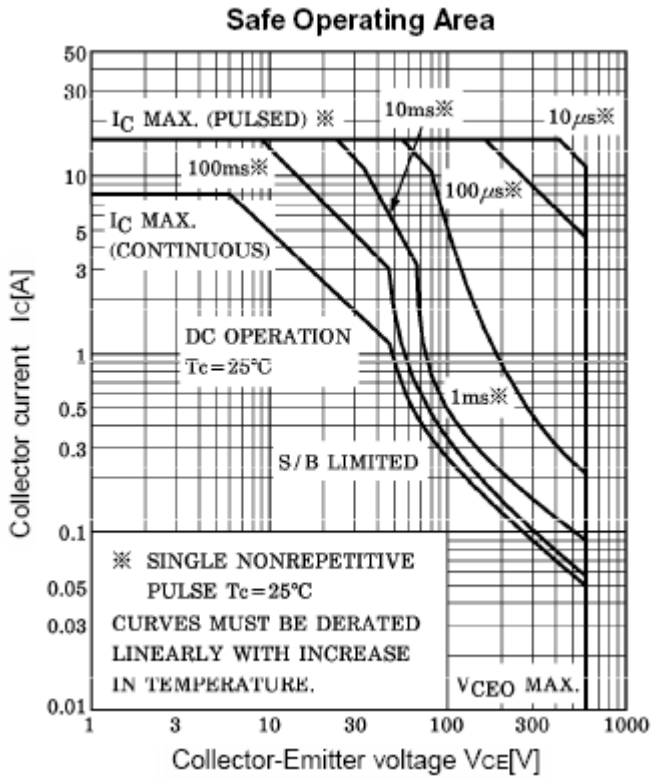


**Power Derating**



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