

**isc Silicon NPN Power Transistor**

**2SC3150**

**DESCRIPTION**

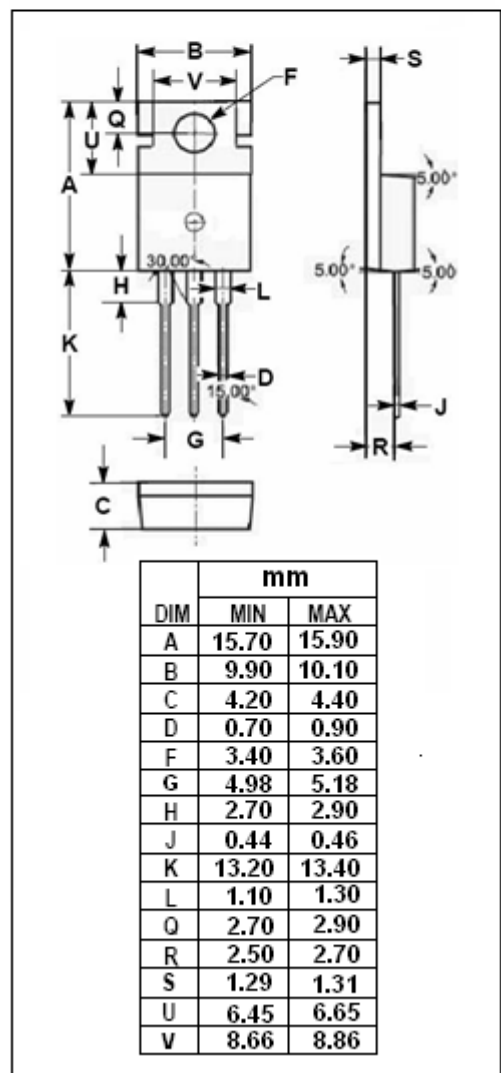
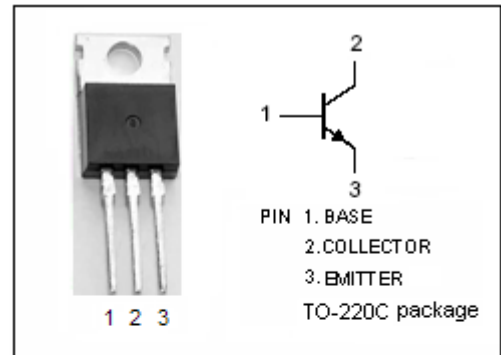
- High Breakdown Voltage-  
:  $V_{(BR)CBO} = 900V(\text{Min})$
- Fast Switching Speed
- Wide Area of Safe Operation

**APPLICATIONS**

- Designed for switching regulator Applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	900	V
$V_{CEO}$	Collector-Emitter Voltage	800	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	3	A
$I_{CM}$	Collector Current-Peak	10	A
$I_B$	Base Current-Continuous	1.5	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	50	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



## isc Silicon NPN Power Transistor

2SC3150

## 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	$I_C=5\text{mA}; R_{BE}=\infty$	800			V
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=3\text{A}; L=500\mu\text{H}; I_B=1\text{A}$	800			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=1\text{mA}; I_E=0$	900			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}; I_C=0$	7			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=1.5\text{A}; I_B=0.3\text{A}$			2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=1.5\text{A}; I_B=0.3\text{A}$			1.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=800\text{V}; I_E=0$			10	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			10	$\mu\text{A}$
$h_{FE-1}$	DC Current Gain	$I_C=0.2\text{A}; V_{CE}=5\text{V}$	10		40	
$h_{FE-2}$	DC Current Gain	$I_C=1\text{A}; V_{CE}=5\text{V}$	8			
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{\text{test}}=1.0\text{MHz}$		60		pF
$f_T$	Current-Gain—Bandwidth Product	$I_C=0.2\text{A}; V_{CE}=10\text{V}$		15		MHz

## Switching times

$t_{on}$	Turn-on Time	$I_C=2\text{A}; I_{B1}=0.4\text{A}; I_{B2}=-0.8\text{A}$ $R_L=200\Omega; V_{CC}=400\text{V}$			1.0	$\mu\text{s}$
$t_{stg}$	Storage Time				3.0	$\mu\text{s}$
$t_f$	Fall Time				0.7	$\mu\text{s}$

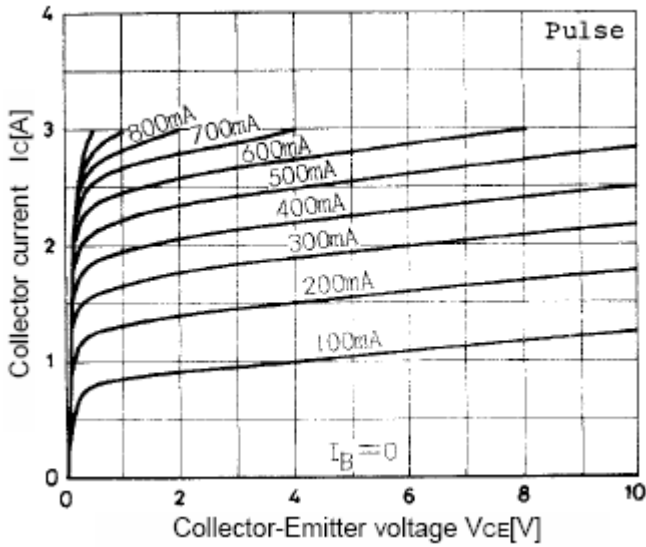
◆  $h_{FE-1}$  Classifications

K	L	M
10-20	15-30	20-40

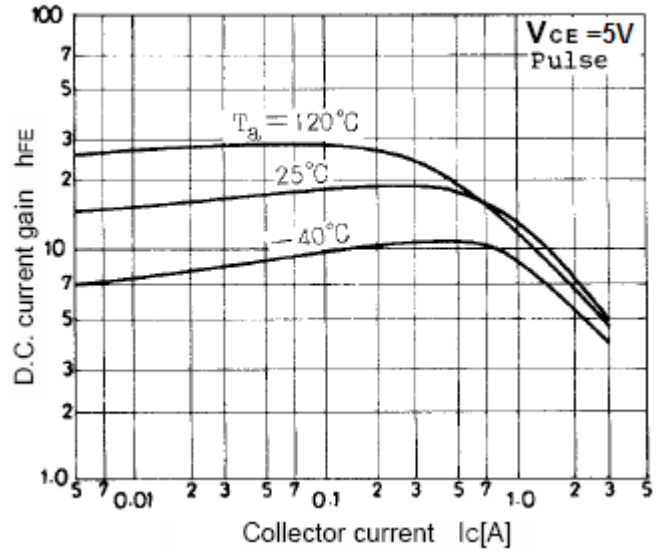
isc Silicon NPN Power Transistor

2SC3150

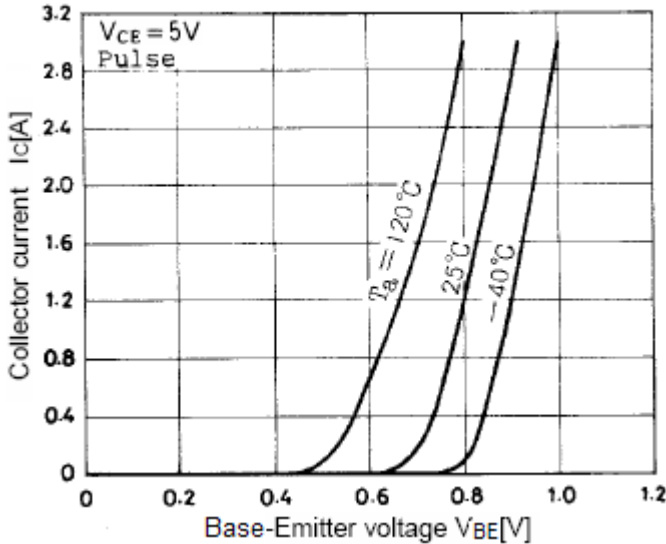
**$I_C$ - $V_{CE}$  Characteristics**



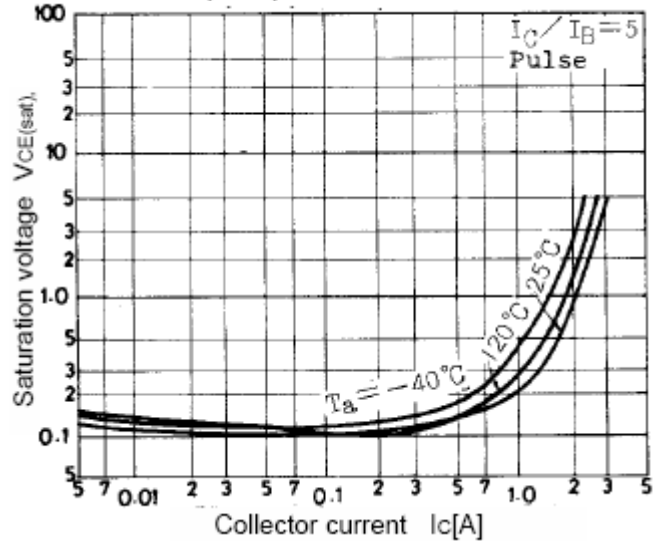
**$h_{FE}$ - $I_C$  Characteristics**



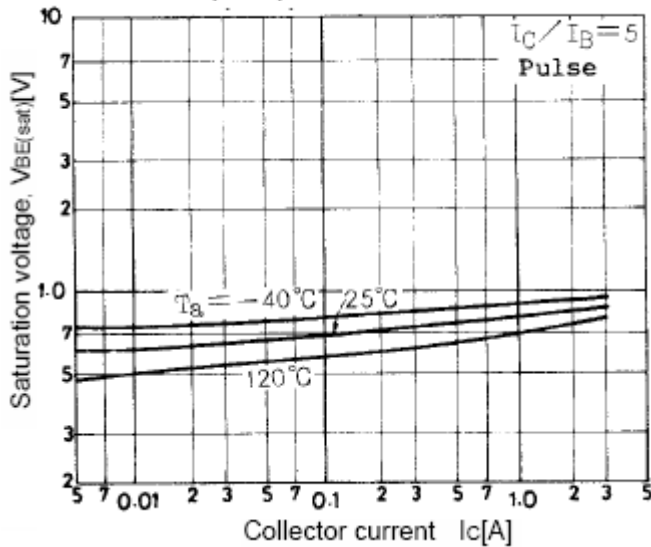
**$I_C$ - $V_{BE}$  Characteristics**



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



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



**Safe Operating Area**

