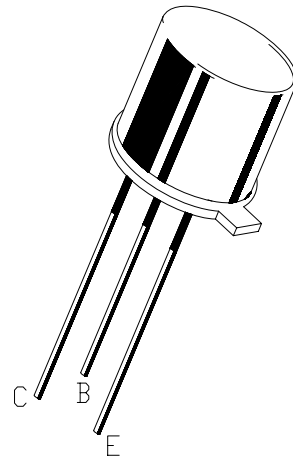


**isc Silicon NPN Transistor****BC141****DESCRIPTION**

- High current (max. 1 A)
- Low voltage (max. 60 V).
- NPN transistor in a TO-39 metal package.
- Complement to Type BC161

**APPLICATIONS**

- Designed for General purpose switching and amplification applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	100	V
$V_{CEO}$	Collector-Emitter Voltage	60	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	1	A
$I_{CM}$	Peak Collector Current	1.5	A
$I_{BM}$	Peak Base Current	200	mA
$P_C$	Collector Power Dissipation@ $T_A \leq 45^\circ\text{C}$	3.7	W
$T_J$	Junction Temperature	175	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ\text{C}$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance,Junction to Case	35	K/W
$R_{th\ j-a}$	Thermal Resistance,Junction to Ambient	200	K/W

## isc Silicon NPN Transistor

## BC141

## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=1\text{A}; I_B=0.1\text{A}$			1	V
$V_{BE(on)}$	Base- Emitter On Voltage	$I_C=1\text{A}; V_{CE}=15\text{V}$			1.8	V
$I_{EBO}$	Emitter cut-off current	$I_E=0; V_{EB}=5\text{V}$			100	nA
$I_{CBO}$	Collector cut-off curren	$V_{CB}=60\text{V dc}, I_E=0$ $V_{CB}=60\text{V dc}, I_E=0, T_J=150^{\circ}\text{C}$			1 100	$\mu\text{A}$ $\mu\text{A}$
$h_{FE1}$	DC Current Gain 141-10 141-16	$I_C=100\mu\text{A}; V_{CE}=1\text{V}$		40 90		
$h_{FE2}$	DC Current Gain 141-10 141-16	$I_C=100\text{mA}; V_{CE}=1\text{V}$	63 100		160 250	
$h_{FE3}$	DC Current Gain 141-10 141-16	$I_C=1\text{A}; V_{CE}=1\text{V}$		20 30		
$f_T$	Transition frequency	$I_C=50\text{mA}; V_{CE}=10\text{V}; f=100\text{MHz}$	50			MHz
$C_{ob}$	Output Capacitance	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$			25	pF

## Switching times (between 10% and 90% levels)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$t_{on}$	turn -on time	$I_C=100\text{mA}; I_{B1}=5\text{mA};$ $I_{B2}=-5\text{mA}$			250	ns
$t_{off}$	turn-off time				850	ns