

**INCHANGE Semiconductor**

**isc Product Specification**

**isc Silicon NPN Power Transistor**

**2N3055**

**DESCRIPTION**

- Excellent Safe Operating Area
- DC Current Gain- $h_{FE}=20-70@I_C = 4A$
- Collector-Emitter Saturation Voltage-  
:  $V_{CE(sat)}= 1.1 V(Max)@ I_C = 4A$
- Complement to Type MJ2955

**APPLICATIONS**

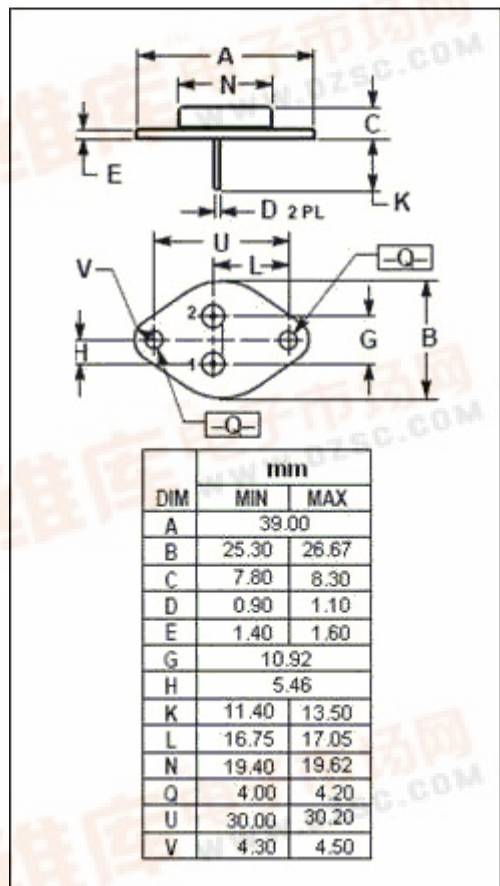
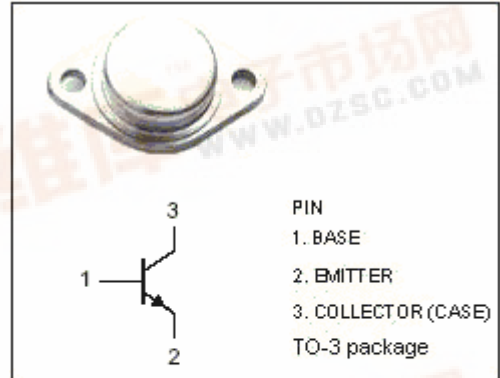
- Designed for general-purpose switching and amplifier applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	100	V
$V_{CER}$	Collector-Emitter Voltage	70	V
$V_{CEO}$	Collector-Emitter Voltage	60	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current-Continuous	15	A
$I_B$	Base Current	7	A
$P_C$	Collector Power Dissipation@ $T_C=25^{\circ}C$	115	W
$T_J$	Junction Temperature	200	$^{\circ}C$
$T_{stg}$	Storage Temperature	-65~200	$^{\circ}C$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance,Junction to Case	1.52	$^{\circ}C/W$



## isc Silicon NPN Power Transistors

2N3055

## ELECTRICAL CHARACTERISTICS

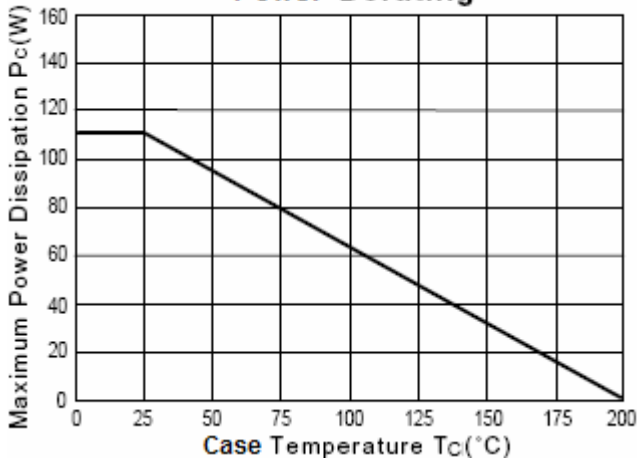
 $T_C=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=200\text{mA}$ ; $I_B=0$	60		V
$V_{CER(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=200\text{mA}$ ; $R_{BE}=100\ \Omega$	70		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C= 4\text{A}$ ; $I_B= 0.4\text{A}$		1.1	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C= 10\text{A}$ ; $I_B= 3.3\text{A}$		3.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C= 4\text{A}$ ; $V_{CE}= 4\text{V}$		1.5	V
$I_{CEO}$	Collector Cutoff Current	$V_{CE}= 30\text{V}$ ; $I_B=0$		0.7	mA
$I_{CEX}$	Collector Cutoff Current	$V_{CE}= 100\text{V}$ ; $V_{BE(off)}= 1.5\text{V}$ $V_{CE}= 100\text{V}$ ; $V_{BE(off)}= 1.5\text{V}$ , $T_C=150^{\circ}\text{C}$		1.0 5.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}= 7.0\text{V}$ ; $I_C=0$		5.0	mA
$h_{FE-1}$	DC Current Gain	$I_C= 4\text{A}$ ; $V_{CE}= 4\text{V}$	20	70	
$h_{FE-2}$	DC Current Gain	$I_C= 10\text{A}$ ; $V_{CE}= 4\text{V}$	5.0		
$I_{S/b}$	Second Breakdown Collector Current with Base Forward Biased	$V_{CE}= 40\text{V}$ , $t= 1.0\text{s}$ , Nonrepetitive	2.87		A
$f_T$	Current Gain-Bandwidth Product	$I_C= 0.5\text{A}$ ; $V_{CE}= 10\text{V}$ ; $f=1.0\text{MHz}$	2.5		MHz

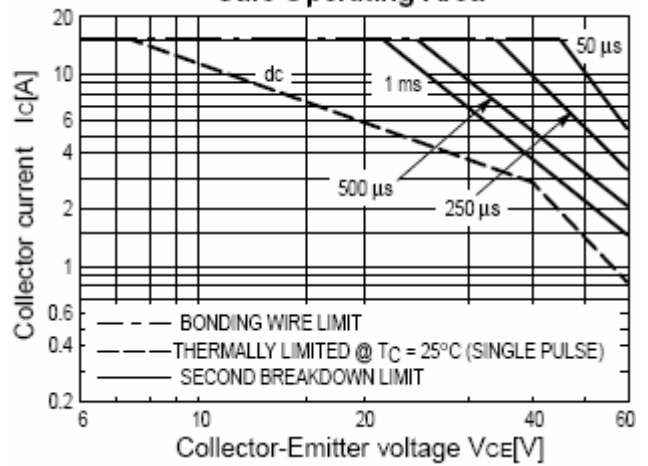
isc Silicon NPN Power Transistors

2N3055

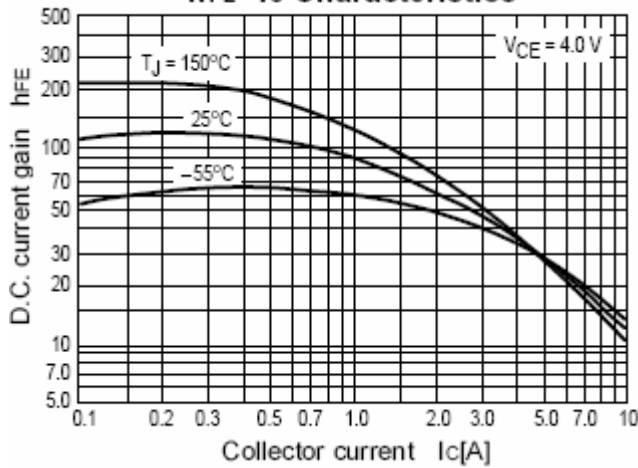
Power Derating



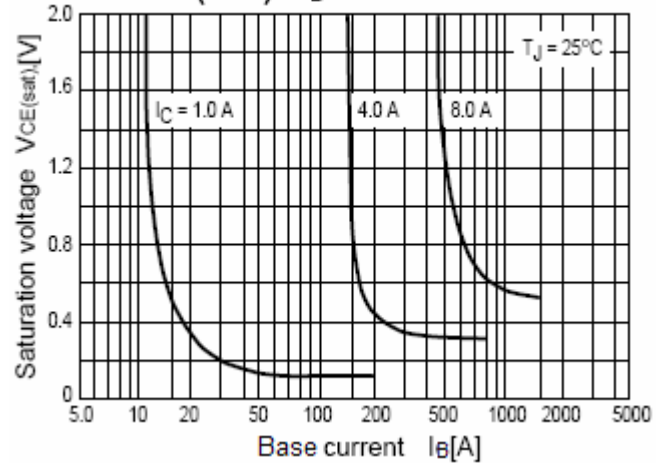
Safe Operating Area



$h_{FE}-I_c$  Characteristics



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



"On" Voltages

