

3875081 G E SOLID STATE

01E 17352 D 17-33-13

General-Purpose Power Transistors

2N3055

File Number 1699

General-Purpose Power Transistor

Broadly Applicable Devices for
Industrial and Commercial Use

Features:

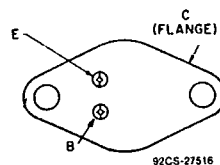
- High gain at high current
- Low Saturation Voltage: $V_{CE(sat)} < 1.1 \text{ V}$, @ $I_C = 4 \text{ A}$, $I_B = 0.4 \text{ A}$
- Excellent safe operating area

The RCA-2N3055 silicon n-p-n transistor intended for a wide variety of medium-voltage, high-current applications.

Typical applications for this transistor include power-switching circuits, audio amplifiers, series and shunt regulator driver and output stages, dc-to-dc converters, inverters, and solenoid (hammer) relay driver service.

This device employs the popular JEDEC TO-204AA/TO-3 package.

TERMINAL DESIGNATIONS



JEDEC TO-204AA/TO-3

MAXIMUM RATINGS, Absolute-Maximum Values:

*COLLECTOR-TO-BASE VOLTAGE, V_{CBO}	100 V
*COLLECTOR-EMITTER SUSTAINING VOLTAGE, $V_{CE(sus)}$ ($R_{\theta E} = 100 \Omega$).....	70 V
*COLLECTOR-EMITTER SUSTAINING VOLTAGE, $V_{CE(sus)}$	60 V
*EMITTER-BASE VOLTAGE, V_{EB0}	7 V
*COLLECTOR CURRENT, I_C	15 A
*BASE CURRENT, I_B	7 A
*COLLECTOR POWER DISSIPATION, P_C	115 W
($T_C = 25^\circ \text{C}$)	
Derate Linearly above 25°C	0.66 W/ $^\circ \text{C}$
*JUNCTION TEMPERATURE, T_J	200°C
*STORAGE TEMPERATURE, T_{stg}	$-65 \sim 200^\circ \text{C}$

*In accordance with JEDEC registration data.

2N3055

ELECTRICAL CHARACTERISTICS, At Case Temperature (T_C) = 25°C Unless Otherwise Specified

CHARACTERISTIC	TEST CONDITIONS						LIMITS			UNITS
	VOLTAGE V dc			CURRENT A dc						
	V _{CE}	V _{EB}	V _{BE}	I _C	I _E	I _B	Min.	Typ.	Max.	
I _{CEX}	100		-1.5				—	—	5	mA
I _{CEX} , T _C =150° C	100		-1.5				—	—	30	
I _{CEO}	30					0	—	—	0.7	
I _{EBO}		7		0			—	—	5	
V _{CE} (SUS)** R _{BE} =100 Ω				0.2			70	—	—	V
V _{CE} (SUS)**				0.2		0	60	—	—	
h _{FE}	4			4			20	—	70	V
	4			10			5	—	—	
V _{BE}	4			4			—	—	1.8	
V _{CE} (sat)				4		0.4	—	—	1.1	
				10		3.3	—	—	8	
f _{hfe} , f=10 kHz	4			1			20	—	—	
h _{fd} , f=1 MHz	4			1			0.8	—	—	
I _{S,B} , t=1 s (non-repetitive)	60						1.95	—	—	A

*In accordance with JEDEC registration data.

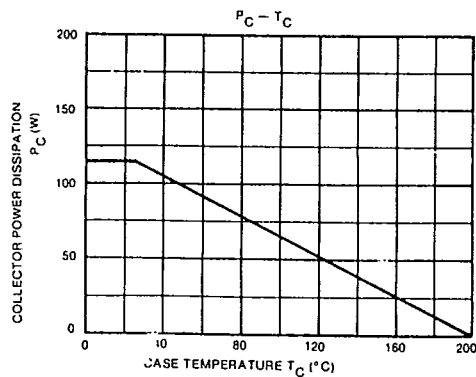
**The sustaining voltages $V_{CE(sus)}$ and $V_{CE(sus)}$ MUST NOT be measured on a curve tracer.

Fig. 1 - Power dissipation vs. temperature derating curve for 2N3055.

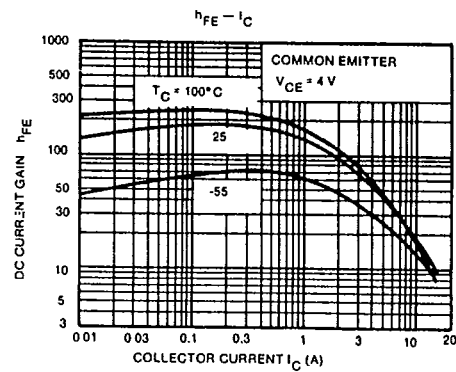


Fig. 2 - Typical dc-beta characteristics for 2N3055.

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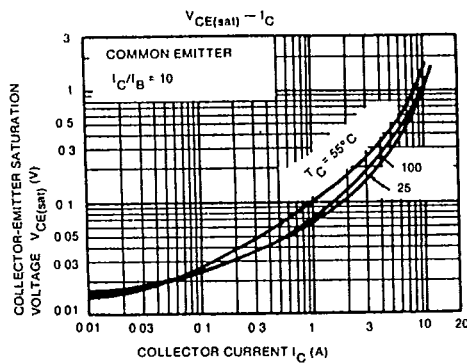


Fig. 3 - Typical collector-to-emitter saturation voltage characteristics for type 2N3055.

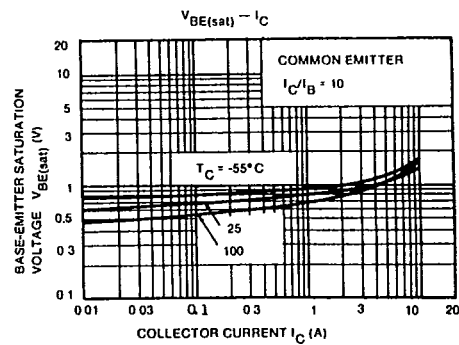


Fig. 4 - Typical base-to-emitter saturation voltage as a function of collector current for type 2N3055.

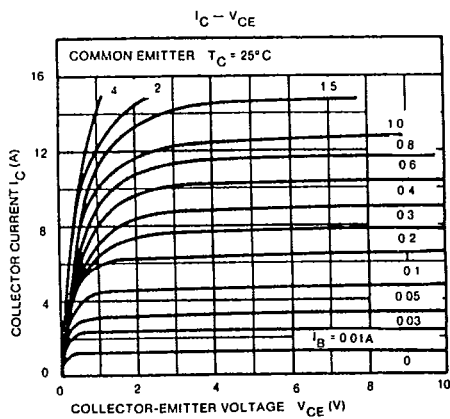


Fig. 5 - Typical output characteristics for 2N3055.

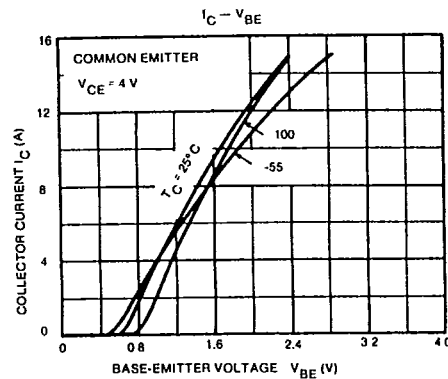


Fig. 6 - Typical transfer characteristics for 2N3055.