

# BC639\_D27Z Datasheet

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DiGi Electronics Part Number	BC639_D27Z-DG
Manufacturer	<a href="#">onsemi</a>
Manufacturer Product Number	BC639_D27Z
Description	TRANS NPN 80V 1A TO92-3
Detailed Description	Bipolar (BJT) Transistor NPN 80 V 1 A 100MHz 1 W Through Hole TO-92-3



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## Purchase and inquiry

Manufacturer Product Number:

BC639\_D27Z

Series:

-

Transistor Type:

NPN

Voltage - Collector Emitter Breakdown (Max):

80 V

Current - Collector Cutoff (Max):

100nA (ICBO)

Power - Max:

1 W

Operating Temperature:

150°C (TJ)

Package / Case:

TO-226-3, TO-92-3 (TO-226AA) Formed Leads

Base Product Number:

BC639

Manufacturer:

onsemi

Product Status:

Obsolete

Current - Collector (Ic) (Max):

1 A

Vce Saturation (Max) @ Ib, Ic:

500mV @ 50mA, 500mA

DC Current Gain (hFE) (Min) @ Ic, Vce:

40 @ 150mA, 2V

Frequency - Transition:

100MHz

Mounting Type:

Through Hole

Supplier Device Package:

TO-92-3

## Environmental & Export classification

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

REACH Status:

REACH Unaffected

HTSUS:

8541.29.0075

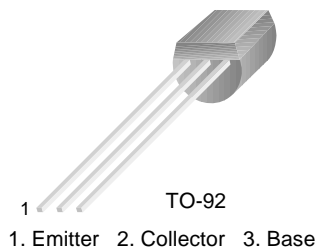




## BC635/637/639

### Switching and Amplifier Applications

- Complement to BC636/638/640



### NPN Epitaxial Silicon Transistor

#### Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{\text{CER}}$	Collector-Emitter Voltage at $R_{\text{BE}}=1\text{K}\Omega$		
	: BC635	45	V
	: BC637	60	V
	: BC639	100	V
$V_{\text{CES}}$	Collector-Emitter Voltage		
	: BC635	45	V
	: BC637	60	V
	: BC639	100	V
$V_{\text{CEO}}$	Collector-Emitter Voltage		
	: BC635	45	V
	: BC637	60	V
	: BC639	80	V
$V_{\text{EBO}}$	Emitter-Base Voltage	5	V
$I_{\text{C}}$	Collector Current	1	A
$I_{\text{CP}}$	Peak Collector Current	1.5	A
$I_{\text{B}}$	Base Current	100	mA
$P_{\text{C}}$	Collector Power Dissipation	1	W
$T_{\text{J}}$	Junction Temperature	150	$^\circ\text{C}$
$T_{\text{STG}}$	Storage Temperature	-65 ~ 150	$^\circ\text{C}$

•  $PW=5\text{ms}$ , Duty Cycle=10%

#### Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$BV_{\text{CEO}}$	Collector-Emitter Breakdown Voltage	$I_{\text{C}}=10\text{mA}$ , $I_{\text{B}}=0$				
	: BC635		45			V
	: BC637		60			V
	: BC639		80			V
$I_{\text{CBO}}$	Collector Cut-off Current	$V_{\text{CB}}=30\text{V}$ , $I_{\text{E}}=0$			0.1	$\mu\text{A}$
$I_{\text{EBO}}$	Emitter Cut-off Current	$V_{\text{EB}}=5\text{V}$ , $I_{\text{C}}=0$			0.1	$\mu\text{A}$
$h_{\text{FE1}}$	DC Current Gain	: All	25			
$h_{\text{FE2}}$		: BC635	40		250	
		: BC637/BC639	40		160	
$h_{\text{FE3}}$	: All	$V_{\text{CE}}=2\text{V}$ , $I_{\text{C}}=500\text{mA}$	25			
$V_{\text{CE(sat)}}$	Collector-Emitter Saturation Voltage	$I_{\text{C}}=500\text{mA}$ , $I_{\text{B}}=50\text{mA}$			0.5	V
$V_{\text{BE(on)}}$	Base-Emitter On Voltage	$V_{\text{CE}}=2\text{V}$ , $I_{\text{C}}=500\text{mA}$			1	V
$f_{\text{T}}$	Current Gain Bandwidth Product	$V_{\text{CE}}=5\text{V}$ , $I_{\text{C}}=10\text{mA}$ , $f=50\text{MHz}$		100		MHz

# Typical Characteristics

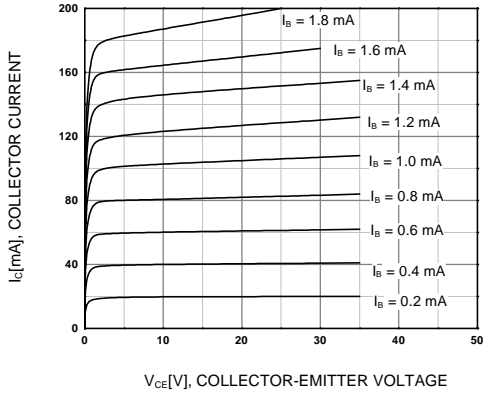


Figure 1. Static Characteristic

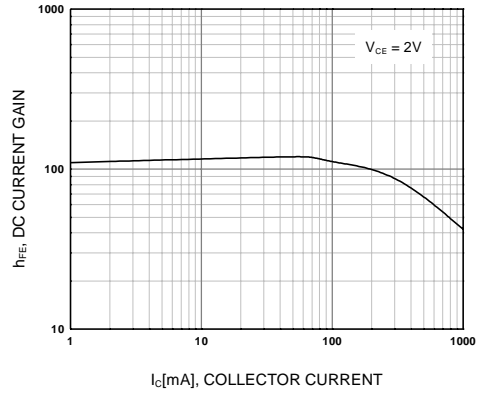


Figure 2. DC current Gain

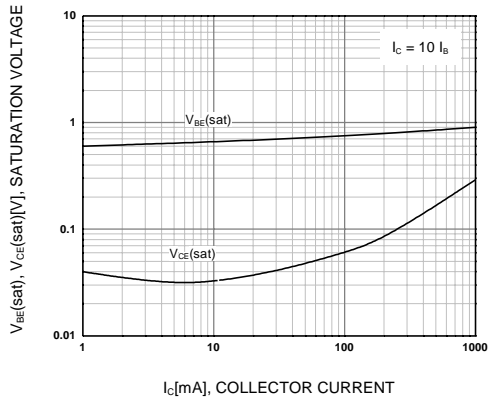


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

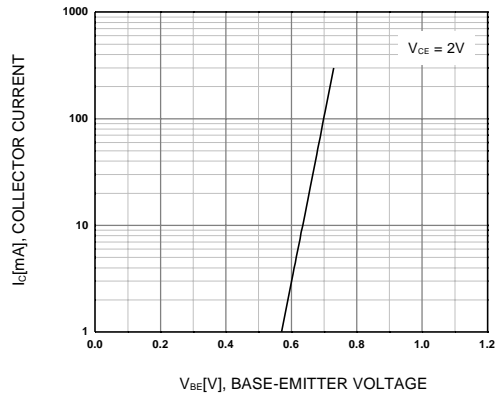


Figure 4. Base-Emitter On Voltage

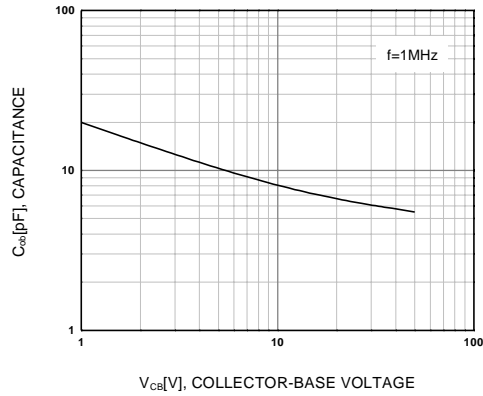
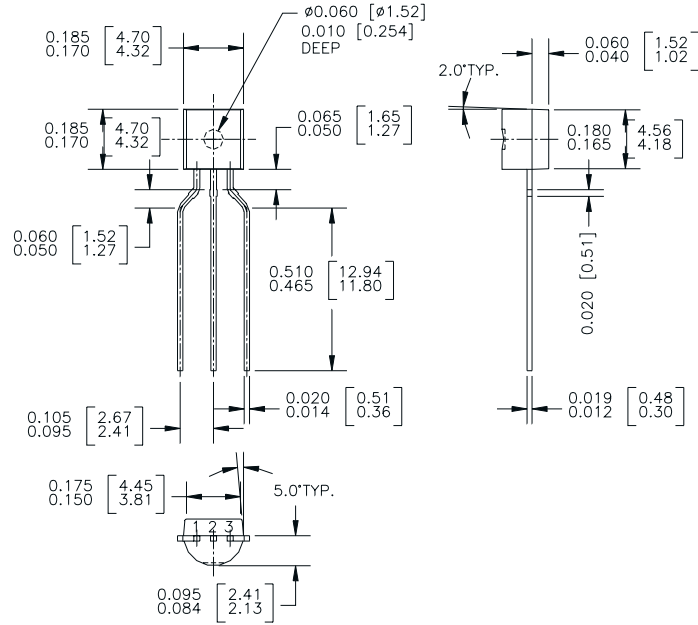


Figure 5. Collector Output Capacitance

Package Dimensions

TO-92



Dimensions in Millimeters

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The Power Franchise <sup>™</sup>		OPTOLOGIC <sup>®</sup>	SILENT SWITCHER <sup>®</sup>	VCX <sup>™</sup>
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- A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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### Definition of Terms

Datasheet Identification	Product Status	Definition
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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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