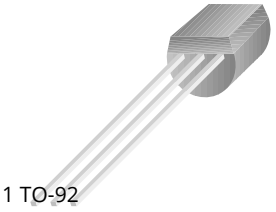
FAIRCHILD
SEMICONDUCTOR®

BC635/637/639

Switching and Amplifier Applications

•Complement to BC636/638/640



1 TO-92
1. Emitter 2. Collector 3. Base

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings

Ta=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CER}	Collector-Emitter Voltage at RBE=1KΩ		
	: BC635	45	V
	: BC637	60	V
	: BC639	100	V
VCES	Collector-Emitter Voltage		
	: BC635	45	V
	: BC637	60	V
	: BC639	100	V
VCEO	Collector-Emitter Voltage		
	: BC635	45	V
	: BC637	60	V
	: BC639	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	1	A
I_{CP}	Peak Collector Current	1.5	A
I_B	Base Current	100	mA
P_C	Collector Power Dissipation	1	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-65 ~ 150	°C

• PW=5ms, Duty Cycle=10%

Electrical Characteristics

Ta=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV C EO	Collector-Emitter Breakdown Voltage	IC=10mA, IB=0				
	: BC635		45			V
	: BC637		60			V
	: BC639		80			V
I_{CBO}	Collector Cut-off Current	VCB=30V, IE=0			0.1	μA
I_{EBO}	Emitter Cut-off Current	VEB=5V, IC=0			0.1	μA
h_{FE1}	DC Current Gain : All	VCE=2V, IC=5mA	25			
h_{FE2}	: BC635	VCE=2V, IC=150mA	40		25	
	: BC637/BC639		40			
h_{FE3}	: All	VCE=2V, IC=500mA	25		0	
V_{CE} (sat)	Collector-Emitter Saturation Voltage	IC=500mA, IB=50mA			0.16	V
V_{BE} (on)	Base-Emitter On Voltage	VCE=2V, IC=500mA			0	V
f_T	Current Gain Bandwidth Product	VCE=5V, IC=10mA, f=50MHz		100	0.5 1	MHz

Typical Characteristics

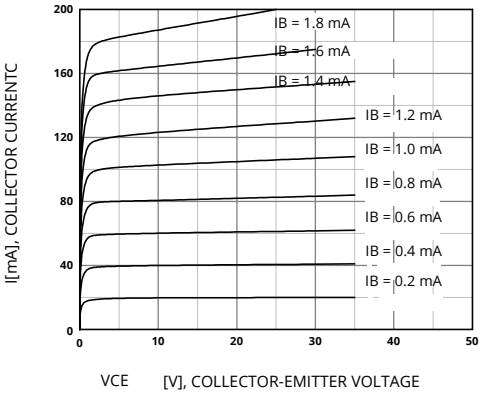


Figure 1. Static Characteristic

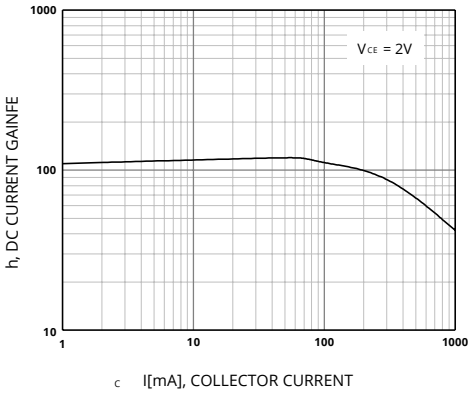


Figure 2. DC current Gain

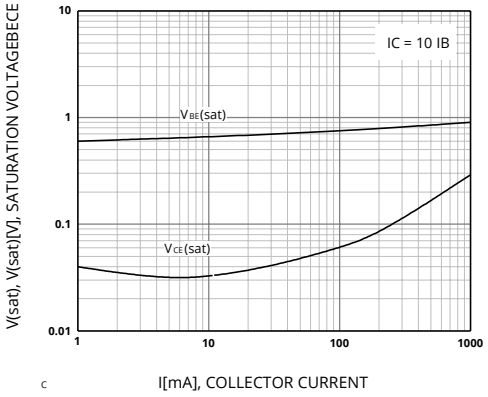


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

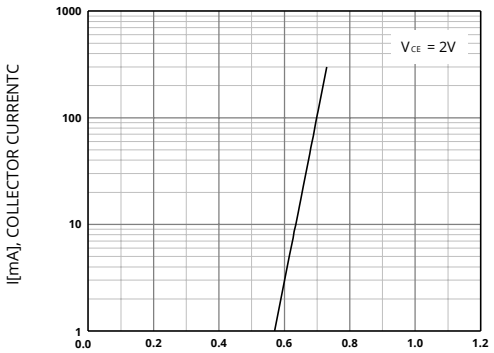


Figure 4. Base-Emitter On Voltage

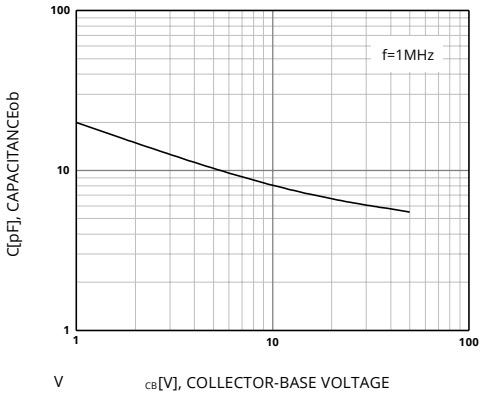
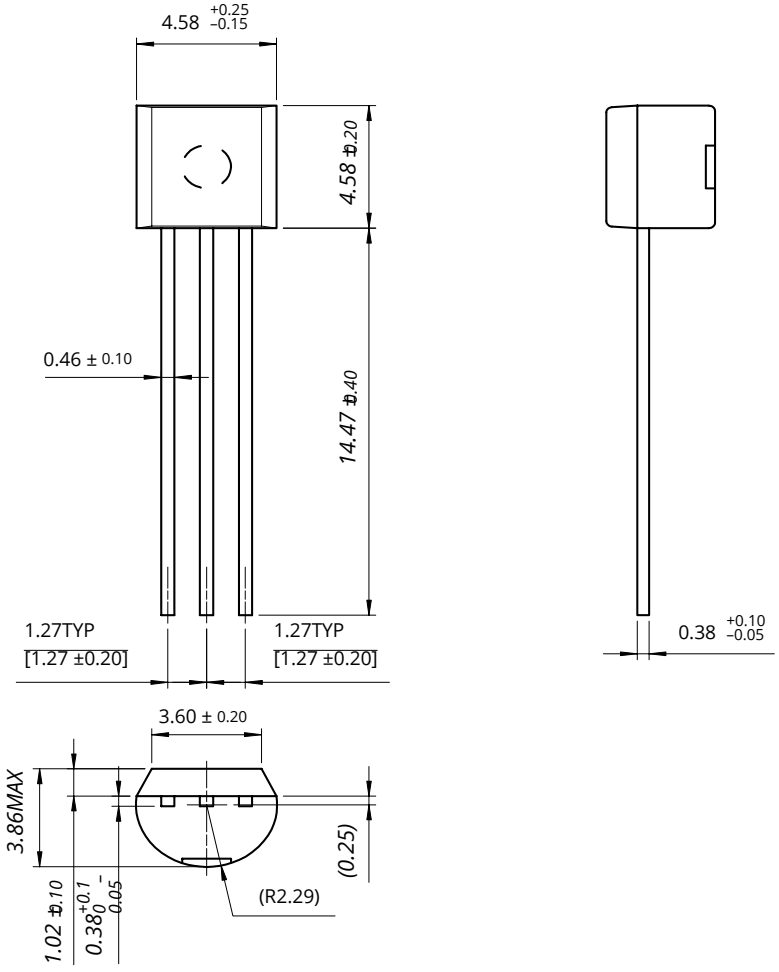


Figure 5. Collector Output Capacitance

Package Dimensions

TO-92



Dimensions in Millimeters

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EcoSPARK™GTO™MSX™QT Optoelectronics™TinyLogic™
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