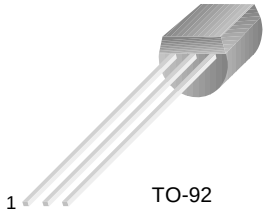
FAIRCHILD SEMICONDUCTOR®

BC635/637/639

Switching and Amplifier Applications

- Complement to BC636/638/640



TO-92

1. Emitter 2. Collector 3. Base

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings T_a=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CER}	Collector-Emitter Voltage at R_{BE}=1KΩ		
	: BC635	45	V
	: BC637	60	V
	: BC639	100	V
V_{CES}	Collector-Emitter Voltage		
	: BC635	45	V
	: BC637	60	V
	: BC639	100	V
V_{CEO}	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 T_a=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C=10mA, I_B=0				
	: BC635		45			V
	: BC637		60			V
	: BC639		80			V
I_{CBO}	Collector Cut-off Current	V_{CB}=30V, I_E=0			0.1	µA
I_{EBO}	Emitter Cut-off Current	V_{EB}=5V, I_C=0			0.1	µA
h_{FE1}	DC Current Gain : All	V_{CE}=2V, I_C=5mA	25			
h_{FE2}	: BC635	V_{CE}=2V, I_C=150mA	40		250	
	: BC637/BC639		40		160	
h_{FE3}	: All	V_{CE}=2V, I_C=500mA	25			
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C=500mA, I_B=50mA			0.5	V
V_{BE}(on)	Base-Emitter On Voltage	V_{CE}=2V, I_C=500mA			1	V
f_T	Current Gain Bandwidth Product	V_{CE}=5V, I_C=10mA, f=50MHz		100		MHz

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Typical Characteristics

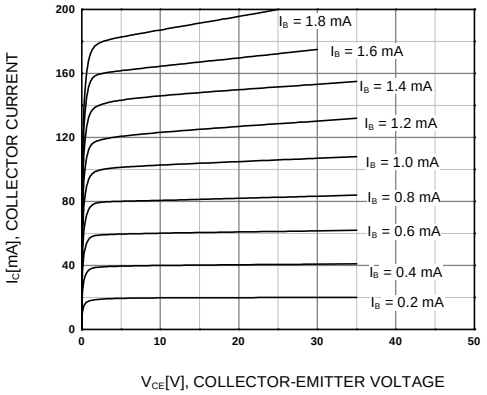

Figure 1. Static Characteristic

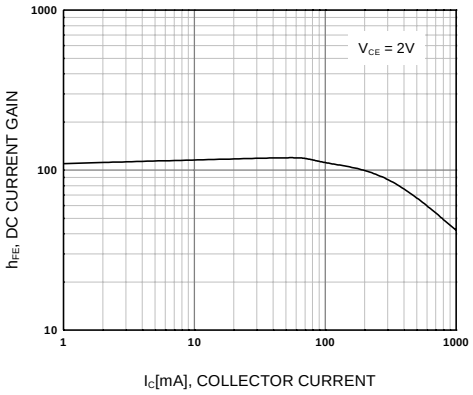

Figure 2. DC current Gain

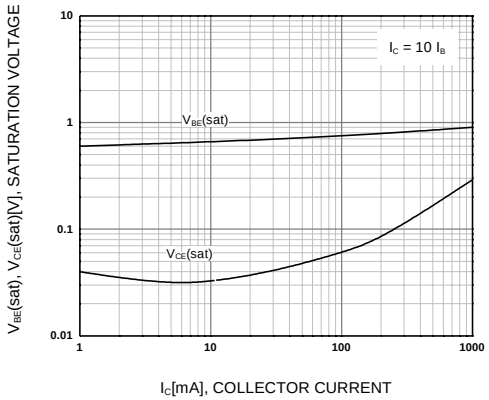

Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

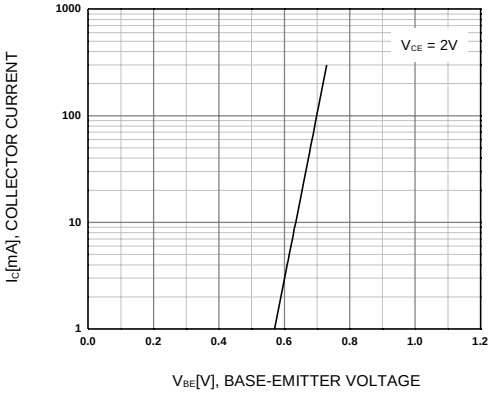

Figure 4. Base-Emitter On Voltage

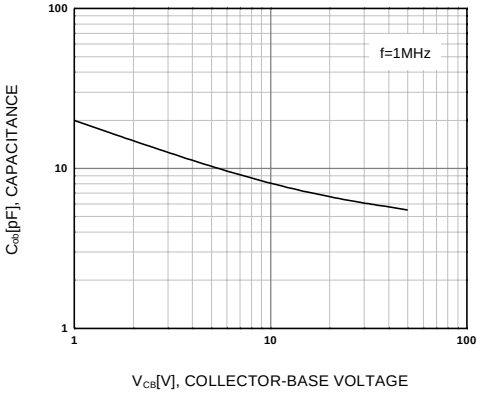

Figure 5. Collector Output Capacitance

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Package Dimensions

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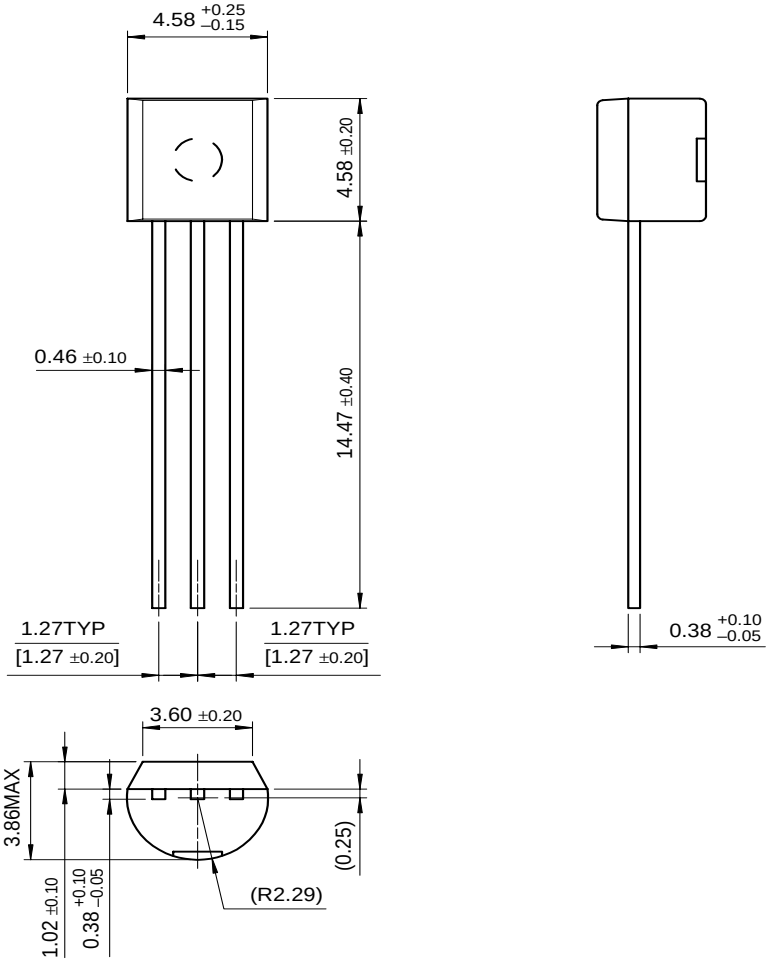

Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic™
E^2CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	I^2C™	OCX™	RapidConfigure™	UHC™
Across the board. Around the world.™		OCXPro™	RapidConnect™	UltraFET®
The Power Franchise™		OPTOLOGIC®	SILENT SWITCHER®	VCX™
Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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