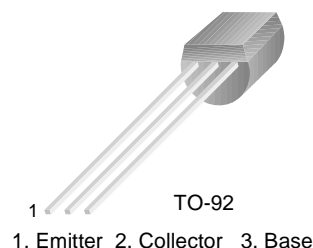


BSR50

BSR50

NPN Darlington Transistor

- This device designed for applications requiring extremely high gain at collector currents to 0.5A.
- Sourced from Process 06.



NPN Epitaxial Silicon Transistor

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

Symbol	Parameter	Ratings	Units
V_{CEO}	Collector-Emitter Voltage	45	V
V_{CBO}	Collector-Base Voltage	60	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	1.5	A
T_J, T_{STG}	Storage Temperature	-55 ~ 150	$^{\circ}\text{C}$

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

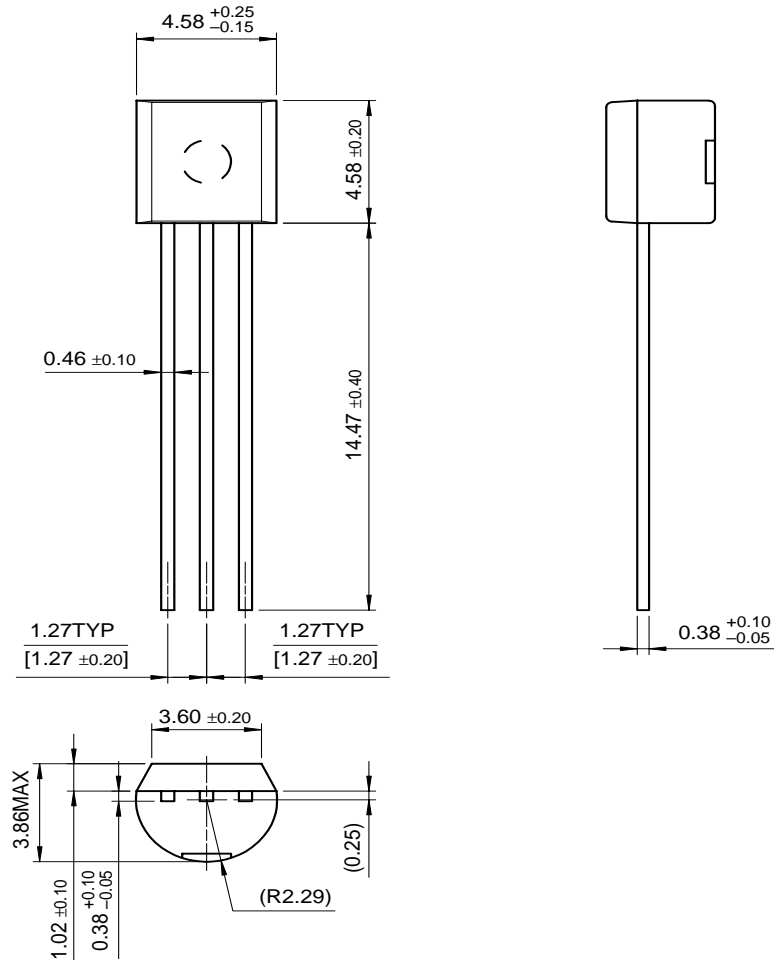
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CEO}	Collector-Emitter Breakdown Voltage *	$I_C = 10\text{mA}, I_B = 0$	45			V
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 100\mu\text{A}, I_B = 0$	60			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 100\mu\text{A}, I_C = 0$	5			V
I_{CBO}	Collector Cut-off Current	$V_{CB} = 45\text{V}, I_E = 0$			50	nA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 4.0\text{V}, I_C = 0$			50	nA
h_{FE}	DC Current Gain	$V_{CE} = 10\text{V}, I_C = 150\text{mA}$ $V_{CE} = 10\text{V}, I_C = 0.5\text{A}$	1,000 2,000			
$V_{CE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C = 500\text{mA}, I_B = 500\mu\text{A}$ $I_C = 1.0\text{A}, I_B = 4.0\text{mA}$			1.3 1.6	V
$V_{BE}(\text{sat})$	Base-Emitter Saturation Voltage	$I_C = 500\text{mA}, I_B = 500\mu\text{A}$ $I_C = 1.0\text{mA}, I_B = 4.0\text{mA}$			0.9 2.2	V

Thermal Characteristics $T_A=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Max.	Units
P_D	Total Device Dissipation Derate above 25°C	625 5.0	mW mW/ $^{\circ}\text{C}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	83.3	$^{\circ}\text{C/W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	200	$^{\circ}\text{C/W}$

Package Dimensions

TO-92



Dimensions in Millimeters

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CoolFET™	FRFET™	MicroFET™	QFET®	SuperSOT™-8
CROSSVOLT™	GlobalOptoisolator™	MicroPak™	QS™	SyncFET™
DOMETM	GTOTM	MICROWIRE™	QT Optoelectronics™	TinyLogic®
EcoSPARK™	HiSeC™	MSXTM	Quiet Series™	TINYOPTO™
E ² CMOSTM	I ² C™	MSXPro™	RapidConfigure™	TruTranslation™
EnSigna™	i-Lo™	OCXTM	RapidConnect™	UHC™
FACT™	ImpliedDisconnect™	OCXPro™	μSerDes™	UltraFET®
FACT Quiet Series™		OPTOLOGIC®	SILENT SWITCHER®	VCX™
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The Power Franchise®		PACMAN™	SPM™	
Programmable Active Droop™		POP™	Stealth™	

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