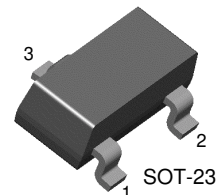


# BC817/BC818

## NPN Epitaxial Silicon Transistor

### Features

- Switching and Amplifier Applications
- Suitable for AF-Driver stages and low power output stages
- Complement to BC807/ BC808



1. Base 2. Emitter 3. Collector

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage		
	: BC817	50	V
	: BC818	30	V
$V_{CEO}$	Collector-Emitter Voltage		
	: BC817	45	V
	: BC818	25	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current (DC)	800	mA
$P_C$	Collector Power Dissipation	310	mW
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-65 ~ 150	$^\circ\text{C}$

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

### 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	$I_C = 10\text{mA}, I_B = 0$				
	: BC817		45			V
	: BC818		25			V
$BV_{CES}$	Collector-Emitter Breakdown Voltage	$I_C = 0.1\text{mA}, V_{BE} = 0$				
	: BC817		50			V
	: BC818		30			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 0.1\text{mA}, I_C = 0$	5			V
$I_{CES}$	Collector Cut-off Current	$V_{CE} = 25\text{V}, V_{BE} = 0$			100	nA
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 4\text{V}, I_C = 0$			100	nA
$h_{FE1}$ $h_{FE2}$	DC Current Gain	$V_{CE} = 1\text{V}, I_C = 100\text{mA}$	100		630	
		$V_{CE} = 1\text{V}, I_C = 300\text{mA}$	60			
$V_{CE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C = 500\text{mA}, I_B = 50\text{mA}$			0.7	V
$V_{BE}(\text{on})$	Base-Emitter On Voltage	$V_{CE} = 1\text{V}, I_C = 300\text{mA}$			1.2	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$ $f = 50\text{MHz}$		100		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = 10\text{V}, f = 1\text{MHz}$			12	pF

\* Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

**h<sub>FE</sub> Classification**

Classification	16	25	40
h <sub>FE1</sub>	110 ~ 250	160 ~ 400	250 ~ 630
h <sub>FE2</sub>	60~	100~	170~

**Ordering Information**

Device(note1)	Device Marking	Package	Packing Method	Qty(pcs)	Pin Difinitions
BC81716MTF	8FA	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC81725MTF	8FB	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC81740MTF	8FC	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC81816MTF	8GA	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC81825MTF	8GB	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector
BC81840MTF	8GC	SOT-23	Tape & Reel	3000	1.Base 2.Emitter 3.Collector

Note1 : Affix "-16,-25,-40" means hFE classification.

Affix "-M" means the matte type package.

Affix "-TF" means the tape & reel type packing.

## Typical Performance Characteristics

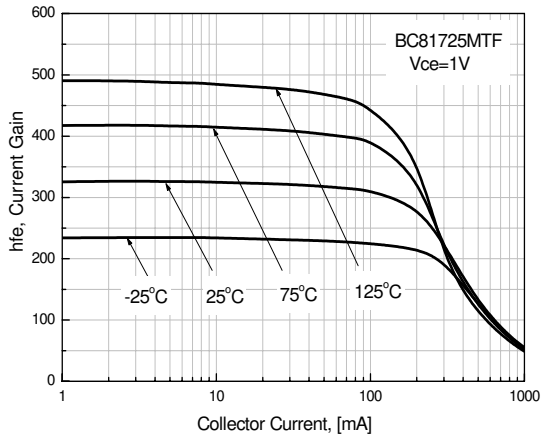


Figure 1. DC current Gain

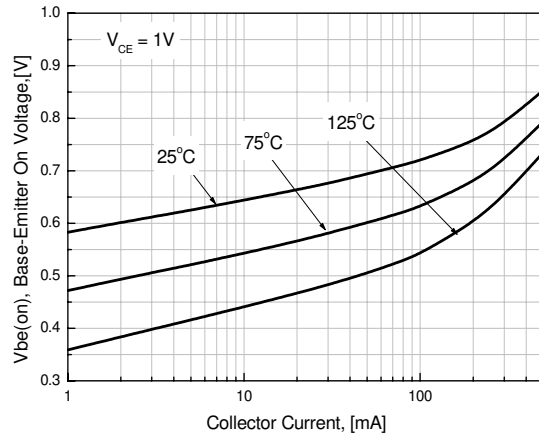


Figure 2. Base-Emitter On Voltage

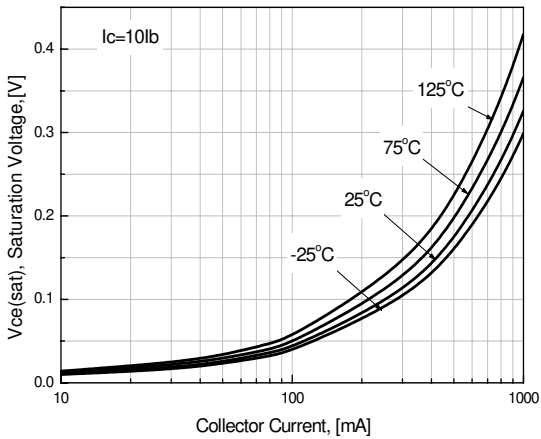


Figure 3. Collector-Emitter Saturation Voltage

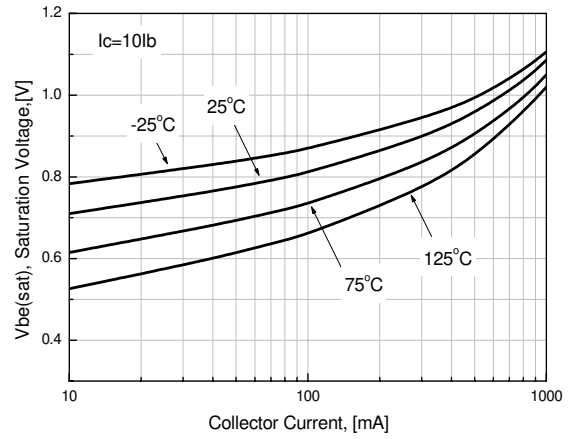


Figure 4. Base-Emitter Saturation Voltage

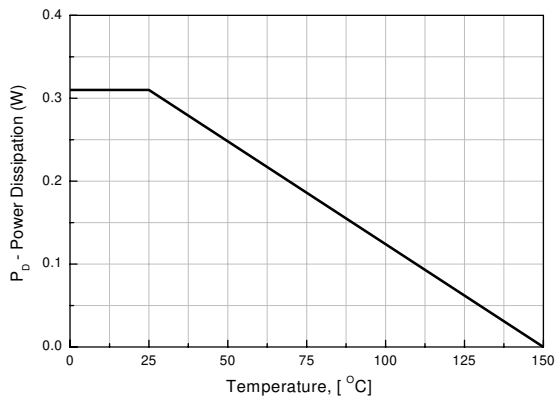
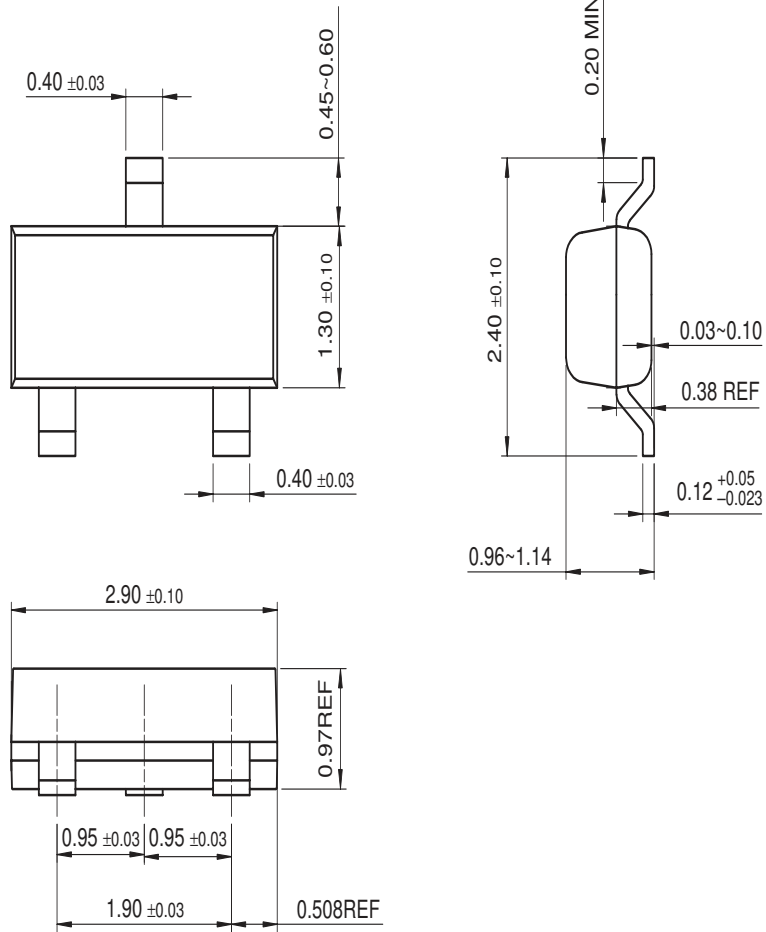


Figure 5. Power Dissipation vs Ambient Temperature

Mechanical Dimensions

SOT-23



Dimensions in Millimeters

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Bottomless™	GTO™	OPTOLOGIC®	SPM™	VCX™
Build it Now™	HiSeC™	OPTOPLANAR™	Stealth™	Wire™
CoolFET™	I <sup>2</sup> C™	PACMAN™	SuperFET™	
CROSSVOLT™	i-Lo™	POP™	SuperSOT™-3	
DOME™	ImpliedDisconnect™	Power247™	SuperSOT™-6	
EcoSPARK™	IntelliMAX™	PowerEdge™	SuperSOT™-8	
E <sup>2</sup> CMOS™	ISOPLANAR™	PowerSaver™	SyncFET™	
EnSigna™	LittleFET™	PowerTrench®	TCM™	
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FAST®	MicroFET™	QS™	TinyBuck™	
FAST <sub>r</sub> ™	MicroPak™	QT Optoelectronics™	TinyPWM™	
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FRFET™	MSX™	RapidConfigure™	TinyLogic®	
	MSXPro™	RapidConnect™	TINYOPTO™	
Across the board. Around the world.™		μSerDes™	TruTranslation™	
The Power Franchise®		ScalarPump™	UHC®	
Programmable Active Droop™				

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