

# SOT23 NPN SILICON PLANAR DARLINGTON TRANSISTORS

## BCV27 BCV47

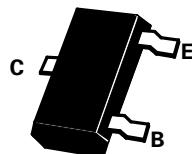
ISSUE 3 – SEPTEMBER 1995

### FEATURES

- \* High  $V_{CE0}$
- \* Low saturation voltage

COMPLEMENTARY TYPES – BCV27 – BCV28  
BCV47 – BCV48

PARTMARKING DETAILS – BCV27 – ZFF  
BCV47 – ZFG



SOT23

### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	BCV27	BCV47	UNIT
Collector-Base Voltage	$V_{CBO}$	40	80	V
Collector-Emitter Voltage	$V_{CEO}$	30	60	V
Emitter-Base Voltage	$V_{EBO}$	10		V
Peak Pulse Current	$I_{CM}$	800		mA
Continuous Collector Current	$I_C$	500		mA
Base Current	$I_B$	100		mA
Power Dissipation at $T_{amb}=25^\circ\text{C}$	$P_{tot}$	330		mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150		$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^\circ\text{C}$ unless otherwise stated).

PARAMETER	SYMBOL	BCV27		BCV47		UNIT	CONDITIONS.
		MIN.	MAX.	MIN.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	40		80		V	$I_C=100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	30		60		V	$I_C=10\text{mA}^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	10		10		V	$I_E=10\mu\text{A}$
Collector Cut-Off Current	$I_{CBO}$		100		100	nA nA $\mu\text{A}$ $\mu\text{A}$	$V_{CB}=30\text{V}$ $V_{CB}=60\text{V}$ $V_{CB}=30\text{V}, T_{amb}=150^\circ\text{C}$ $V_{CB}=60\text{V}, T_{amb}=150^\circ\text{C}$
Emitter Base Cut-Off Current	$I_{EBO}$		100		100	nA	$V_{EB}=4\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		1.0		1.0	V	$I_C=100\text{mA}, I_B=0.1\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		1.5		1.5	V	$I_C=100\text{mA}, I_B=0.1\text{mA}^*$
Static Forward Current Transfer Ratio	$h_{FE}$	4K 10K 20K 4K		2K 4K 10K 2K			$I_C=100\mu\text{A}, V_{CE}=1\text{V}^\dagger$ $I_C=10\text{mA}, V_{CE}=5\text{V}^*$ $I_C=100\text{mA}, V_{CE}=5\text{V}^*$ $I_C=500\text{mA}, V_{CE}=5\text{V}^*$
Transition Frequency	$f_T$	170 Typical		170 Typical		MHz	$I_C=50\text{mA}, V_{CE}=5\text{V}$ $f = 20\text{MHz}$
Output Capacitance	$C_{obo}$	3.5 Typical		3.5 Typical		pF	$V_{CB}=10\text{V}, f=1\text{MHz}$

\*Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$

† Periodic Sample Test Only. For typical graphs see FMMT38A datasheet