

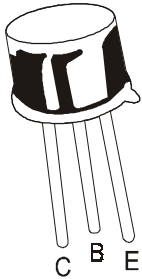
## Transistors

Order code	Manufacturer code	Description
81-0120	n/a	BFY50 TRAN NPN 35V 1A TO39 RC
81-0122	n/a	BFY51 TRAN NPN 30V 1A TO39 RC
81-0124	n/a	BFY52 TRAN NPN 20V 1A TO39 RC

Transistors	Page 1 of 5
The enclosed information is believed to be correct, Information may change without notice due to product improvement. Users should ensure that the product is suitable for their use. E. & O. E.	Revision A 20/02/2007

**SILICON PLANAR TRANSISTORS**

**BFY50, BFY51, BFY52**



**TO-39  
Metal Can Package**

**General Purpose Transistors.**

**ABSOLUTE MAXIMUM RATINGS (Ta=25°C unless specified otherwise)**

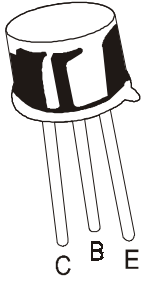
DESCRIPTION	SYMBOL	BFY50	BFY51	BFY52	UNITS
Collector Emitter Voltage	$V_{CEO}$	35	30	20	V
Collector Base Voltage	$V_{CBO}$	80	60	40	V
Emitter Base Voltage	$V_{EBO}$		6.0		V
Collector Current Continuous	$I_C$		1.0		A
Power Dissipation @ Ta=25°C	$P_D$		0.8		W
Derate Above 25°C			4.6		mW/°C
Power Dissipation@ Tc=25°C	$P_D$		5.0		W
Derate Above 25°C			28.6		mW/°C
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$		-65 to +200		°C

**THERMAL RESISTANCE**

Junction to Ambient	$R_{th(j-a)}$		89.5		°C/W
Junction to Case	$R_{th(j-c)}$		16.5		°C/W

**ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)**

DESCRIPTION	SYMBOL	BFY50	BFY51	BFY52	UNITS
Collector Emitter Voltage	$V_{CEO}$ $I_C=10mA, I_B=0$	>35	>30	>20	V
Collector Base Voltage	$V_{CBO}$ $I_C=10\mu A, I_E=0$	>80	>60	>40	V
Emitter Base Voltage	$V_{EBO}$ $I_C=10\mu A, I_C=0$	>6.0	>6.0	>6.0	V
Collector Cut off Current	$I_{CBO}$ $V_{CB}=60V, I_E=0$	<50			nA
			<50		nA
				<50	nA
					nA
	$T_j=100^\circ C$				
	$V_{CB}=60V, I_E=0$	<2.5			$\mu A$
	$V_{CB}=40V, I_E=0$		<2.5		$\mu A$
	$V_{CB}=30V, I_E=0$			<2.5	$\mu A$

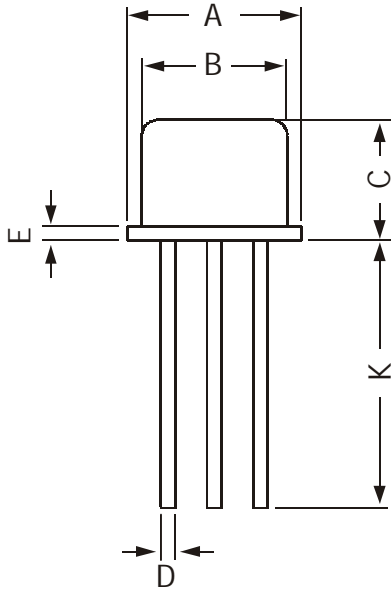

**TO-39**  
**Metal Can Package**

DESCRIPTION	SYMBOL		BFY50	BFY51	BFY52	UNITS
Emitter Cut off Current	$I_{EBO}$	$V_{EB}=5V, I_C=0$	<50	<50	<50	$\mu A$
		$T_j=100^\circ C$ $V_{EB}=5V, I_C=0$	<2.8	<2.8	<2.8	$\mu A$
DC Current Gain	$h_{FE}$	$I_C=10mA, V_{CE}=6V$	>20	>30	>30	
		$I_C=150mA, V_{CE}=6V$	>30	>40	>60	
		$I_C=1A, V_{CE}=6V$	>15	>15	>15	
Collector Emitter Saturation Voltage	$V_{CE(Sat)}$ *	$I_C=150mA, I_B=15mA$	<0.2	<0.35	<0.35	V
		$I_C=1A, I_B=100mA$	<0.1	<1.6	<1.6	V
Base Emitter Saturation Voltage	$V_{BE(Sat)}$ *	$I_C=1A, I_B=100mA$	<2.0	<2.0	<2.0	V
<b><u>DYNAMIC CHARACTERISTICS</u></b>						
Small Signal Current Gain	$ h_{fe} $	$I_C=1mA, V_{CE}=6V,$ $f=1kHz$	>10	>30	>30	
Output Capacitance	$C_{ob}$	$V_{CB}=12V, f=500kHz$	<12	<12	<12	pF
Transistors Frequency	$f_T$	$I_C=50mA, V_{CE}=6V$ $f=20MHz$	>60	>50	>50	MHz

\*Pulse Test: Pulse Width= 300 $\mu s$ , Duty Cycle =1%

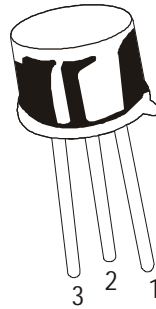
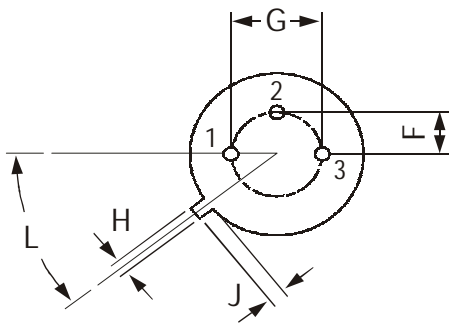
**TO-39**  
**Metal Can Package**

**TO-39 Metal Can Package**



DIM	MIN	MAX
A	8.50	9.39
B	7.74	8.50
C	6.09	6.60
D	0.40	0.53
E	—	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.70	—
L	42 DEG	48 DEG

All dimensions are in mm



PIN CONFIGURATION  
1. EMITTER  
2. BASE  
3. COLLECTOR

**Packing Detail**

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-39	500 pcs/polybag	540 gm/500 pcs	3" x 7.5" x 7.5"	20K	17" x 15" x 13.5"	32K	40 kgs

### **Disclaimer**

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