

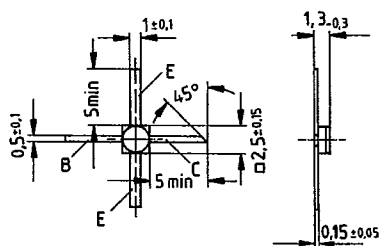
Silicon Bipolar Transistors

Metal Ceramic Packages

Type		Max. ratings			Characteristics at $T_A = 25^{\circ}\text{C}$									Package	Marking
		V_{CEO}	I_C	P_{tot}	f_T	F	I_C	V_{CE}	f	G_P	I_C	V_{CE}	f		
NPN = N PNP = P		V	mA	mW	GHz	dB	mA	V	GHz	dB	mA	V	GHz		
	BFQ 57 N	16	35	450	6.5	2.6	15	15	2	10.5	25	15	4	100 mil	57
	BFQ 58 N	16	30	450	6.5	2.2	15	15	2	9	15	15	4	100 mil	58
	BFQ 59 N	20	35	700	4.8	3.4	8	10	2	11	15	10	2	200 mil	BFQ 59
	BFR 14A N	12	30	250	5.0	3.8	3	10	2	12	15	10	2	140 mil	BFR 14A
S	BFQ 70 N	15	35	300	5.2	1.5	4	6	0.8	18	20	6	0.8	Cerec-X	70
S	BFQ 71 N	15	30	300	5.2	1.5	2	6	0.8	15	2	6	0.8	Cerec-X	71
S	BFQ 72 N	15	50	350	5.1	2.5	10	8	0.8	18	25	8	0.8	Cerec-X	72
	BFQ 73* N	15	75	500	4.9	3.9	50	5	0.8	10	60	8	0.8	Cerec-X	73
S	BFQ 73S N	15	100	500	5.3	3.0	50	5	0.8	15	50	5	0.8	Cerec-X	73S
S	BFQ 74 N	16	35	300	6.0	2.5	10	10	2.0	14	15	10	2.0	Cerec-X	74
	BFQ 75 P	12	50	350	5.0	3.0	10	8	0.8	14	30	8	0.8	Cerec-X	75
	BFQ 76 P	15	30	250	5.0	2.5	4	10	0.8	17	4	10	0.8	Cerec-X	76
	BFQ 77 N	15	20	250	7.0	1.8	4	10	2.0	12	4	10	2.0	Cerec-X	77

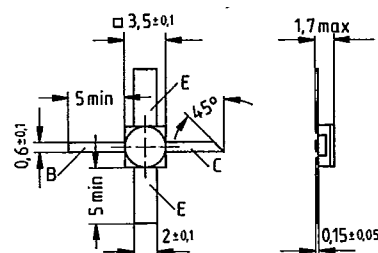
* For new design BFQ 73S

100 mil



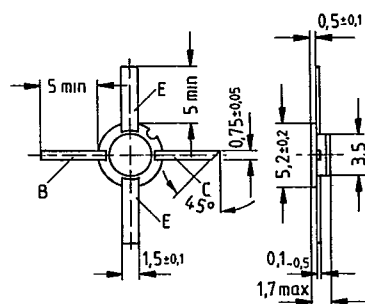
Approx. weight: 0.5 g

140 mil



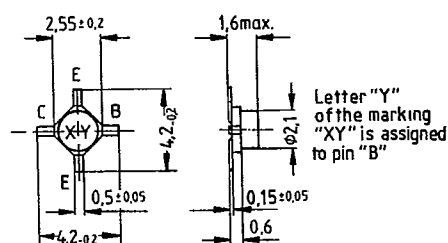
Approx. weight: 0.5 g

200 mil



Approx. weight: 1 g

Cerec-X

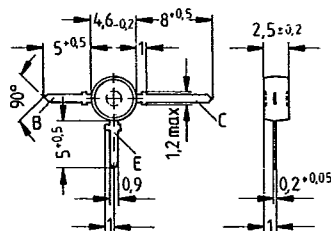


Approx. weight: 0.02 g

Plastic Packages

Type			Max. ratings			Characteristics at $T_A = 25^{\circ}\text{C}$								Package	
			V_{CEO}	I_C	P_{tot}	f_T	F	I_C	V_{CE}	f	G_p	I_C	V_{CE}		f
NPN = N PNP = P			V	mA	mW	GHz	dB	mA	V	MHz	dB	mA	V	MHz	
S	BFQ 69	N	15	30	200	5.5	1.5	5	10	800	15	5	10	800	T-plast
S	BFR 34A	N	12	30	200	5.0	2	2	6	800	14	15	6	800	T-plast
S	BFR 90	N	15	30	200	5.0	2	2	6	800	14	15	6	800	T-plast
S	BFR 91	N	15	50	250	5.0	1.9	2	5	500	17	30	5	500	T-plast
S	BFR 91A	N	12	50	300	6.0	1.6	4	8	800	14	30	8	800	T-plast
	BFR 96*	N	15	90	500	5.0	3.8	50	10	800	10	50	10	800	T-plast
S	BFR 96S	N	15	100	700	5.0	4	70	10	800	11.5	70	10	800	T-plast
S	BFT 65	N	15	50	250	5.0	2.8	10	8	800	13	25	8	800	T-plast
S	BFT 97	N	15	30	200	4.8	1.8	4	6	800	—	—	—	—	T-plast
S	BFT 98T	N	20	150	800	3.2	—	—	—	—	12	80	8	800	T-plast
S	BFW 92	N	15	25	200	2.5	3.8	2	5	800	11	14	5	800	T-plast

* For new design BFR 96S

T-plast

Approx. weight: 0.25 g

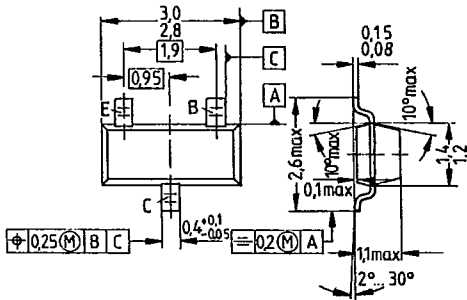
Silicon Bipolar Transistors

SMD Plastic Packages

Type	Max. ratings			Characteristics at T _A = 25°C										Package	Marking
	V _{CEO}	I _C	P _{tot}	f _T	F	I _C	V _{CE}	f	G _p	I _C	V _{CE}	f			
NPN = N PNP = P	V	mA	mW	MHz	dB	mA	V	GHz	dB	mA	V	MHz			
S BFQ 29P N	15	30	280	5.0	1.8	4	6	800	—	—	—	—	SOT-23	KC	
S BFQ 81 N	16	30	280	5.8	1.4	5	10	800	15	5	10	800	SOT-23	RA	
S BFR 35AP N	12	30	280	5.0	1.5	2	6	800	14	15	6	800	SOT-23	GE	
S BFR 92P N	15	30	280	5.0	1.5	2	6	800	14	15	6	800	SOT-23	GF	
S BFR 93A N	12	50	250	5.5	1.6	5	8	800	13.5	30	8	800	SOT-23	R2	
S BFR 93P N	15	50	280	5.0	2.4	10	8	800	13	25	8	800	SOT-23	GG	
S BFS 17P N	15	25	280	2.5	3.8	2	5	800	10	10	5	800	SOT-23	MC	
S BFT 92 P	15	25	200	5.0	2.7	2	10	500	18	14	10	500	SOT-23	W1	
S BFT 93 P	12	35	200	5.0	2.4	2	5	500	16.5	30	5	500	SOT-23	X1	
S	BFQ 17P N	25	150	1000	1.4	—	—	—	—	16	60	15	200	SOT-89	FD
	BFQ 19P* N	15	75	1000	5.1	3.8	50	10	800	11.5	70	10	800	SOT-89	FE
	BFQ 19S N	15	75	1000	5.1	2.8	50	10	800	11.8	70	10	800	SOT-89	FG
	BFQ 64 N	20	200	1000	3.0	—	—	—	—	10	100	10	800	SOT-89	FC
S (BFP 29) N	15	30	280	5.0	1.8	4	6	800	—	—	—	—	SOT-143	FC	
S BFP 81 N	16	30	300	5.8	1.4	5	10	800	15	5	10	800	SOT-143	FA	
S BFP 35A N	12	30	280	4.9	1.5	2	6	800	14	15	6	800	SOT-143	FD	
	(BFP 17) N	15	25	280	2.5	3.8	2	5	800	—	—	—	SOT-143	FB	
S BFP 93A N	12	50	280	5.5	1.6	5	8	800	13.5	30	8	800	SOT-143	FE	

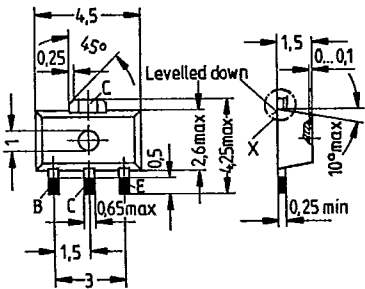
* For new design BFQ 19S
() In preparation

SOT-23

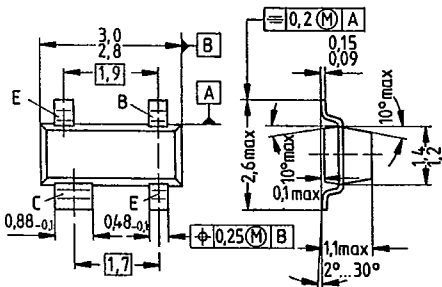


Approx. weight: 0.02 g

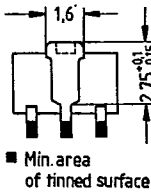
SOT-89



SOT-143



Approx. weight: 0.02 g



Approx. weight: 0.1 g

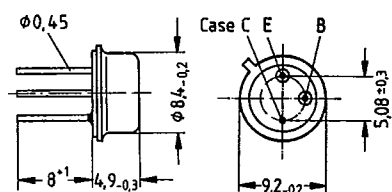
Metal Packages*

Type		Max. ratings			Characteristics at $T_A = 25^\circ\text{C}$									Package
		V_{CEO}	I_C	P_{tot}	f_T	F				G_p				
NPN = N PNP = P		V	mA	mW	GHz	dB	I_C mA	V_{CE} V	f MHz	dB	I_C mA	V_{CE} V	f MHz	
	BFW 16A N	25	150	1500	1.2	—	—	—	—	16	70	18	200	TO-39
S	BFR 15A N	12	30	200	4.5	3.0	2	6	800	12	10	6	800	TO-72
S	BFS 55A N	15	50	250	4.5	2.9	10	8	800	10	25	8	800	TO-72
S	BFT 66 N	15	30	200	4.3	0.9	3	6	10	—	—	—	—	TO-72
S	BFX 59 N	20	100	370	0.9	3.4	3	10	200	—	—	—	—	TO-72
S	BFX 59F N	20	100	370	1.1	3.4	3	10	200	—	—	—	—	TO-72
S	BFX 60 N	25	25	370	0.5	5.0	2	10	200	—	—	—	—	TO-72
S	BFY 90 N	15	25	200	2.0	5.0	2	5	800	8	14	10	800	TO-72
S	BFT 38 P	12	35	250	4.8	3	10	5	800	11	30	5	800	TO-72

Metal Ceramic Packages

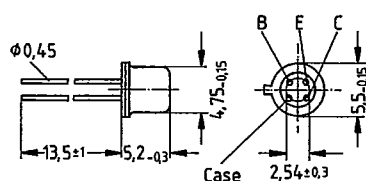
S	BFT 98	N	20	200	2250	3.3	-	-	-	-	15	120	15	800	TO-117
	BFT 98B	N	20	200	2250	3.3	-	-	-	-	14	120	15	800	TO-117
S	BFT 99	N	20	350	4000	3.0	-	-	-	-	12	240	15	800	TO-117
	BFT 99A	N	20	350	4000	3.0	-	-	-	-	12	240	15	800	TO-117

* Other pin configurations upon request

TO-39

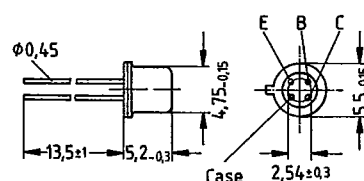
Approx. weight: 1 g

TO-72 BFR 15A, BFS 55A,
BFT 66

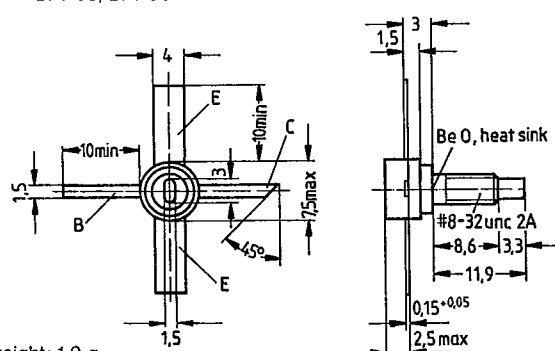


Pins isolated from case
Approx. weight: 0.4 g

BFX 59, BFX 59F, BFX 60,
BFX 90, BFT 38



TO-117 BFT 98, BFT 99



Approx. weight: 1.9 g

BFT 98B, BFT 99A

