

Medium Power Transistor (−80V, −0.7A)

2SB1189 / 2SB1238 / 2SB889F

●Features

- 1) High breakdown voltage and high current. (−80V, −0.7A)
- 2) Complements the 2SD1767/2SD1859/2SD1200F.

●Packaging specifications and hFE

Type	2SB1189	2SB1238	2SB889F
Package	MPT3	ATV	TO-126FP
hFE	PQR	PQR	Q
Marking	BD *	—	—
Code	T100	TV2	—
Basic ordering unit (pieces)	1000	2500	1000

* Denotes hFE

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CEO}	−80	V
Collector-emitter voltage	V _{CE0}	−80	V
Emitter-base voltage	V _{EB0}	−5	V
Collector current	I _C	−0.7	A
Collector power dissipation	P _C	0.5	W
		2	
		1	
		5	
Junction temperature	T _J	150	°C
Storage temperature	T _{stg}	−55~150	°C

* 1 On 40×40×0.7mm ceramic board.

* 2 Printed circuit board 1.7mm thick, collector plating 1cm² or larger.

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CEO}	−80	—	—	V	I _C =−50 μA
Collector-emitter breakdown voltage	BV _{CE0}	−80	—	—	V	I _C =−2mA
Emitter-base breakdown voltage	BV _{EB0}	−5	—	—	V	I _E =−50 μA
Collector cutoff current	I _{CO}	—	—	−0.5	μA	V _{CB} =−50V
Emitter cutoff current	I _{EO}	—	—	−0.5	μA	V _{EB} =−4V
Collector-emitter saturation voltage	V _{CE(sat)}	—	−0.2	−0.4	V	I _C /I _E =−500mA/−50mA
DC current transfer ratio	h _{FE}	82	—	390	—	V _{CE} /I _C =−3V/−0.1A
Transition frequency	f _T	—	100	—	MHz	V _{CE} =−10V, I _E =50mA, f=100MHz
Output capacitance	C _{ob}	—	14	20	pF	V _{CB} =−10V, I _E =0A, f=1MHz

(96-618-B13)

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●Features

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- 2) Complements the 2SB1189/2SB1238/2SB889F.

●Packaging specifications and hFE

Type	2SD1767	2SD1859	2SD1200F
Package	MPT3	ATV	TO-126FP
hFE	PQR	QR	QR
Marking	DC *	—	—
Code	T100	TV2	—
Basic ordering unit (pieces)	1000	2500	1000

* Denotes hFE

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CEO}	80	V
Collector-emitter voltage	V _{CE0}	80	V
Emitter-base voltage	V _{EB0}	5	V
Collector current	I _C	0.7	A (DC)
		1	A (Pulse) * 1
		0.5	
Collector power dissipation	P _C	2	W
		1	
		5	
Junction temperature	T _J	150	°C
Storage temperature	T _{stg}	−55~150	°C

* 1 P_W=10ms, duty=1/2

* 2 On 40×40×0.7mm ceramic board.

* 3 Printed circuit board 1.7mm thick, collector plating 1cm² or larger.

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CEO}	80	—	—	V	I _C =50 μA
Collector-emitter breakdown voltage	BV _{CE0}	80	—	—	V	I _C =2mA
Emitter-base breakdown voltage	BV _{EB0}	5	—	—	V	I _E =50 μA
Collector cutoff current	I _{CO}	—	—	0.5	μA	V _{CB} =50V
Emitter cutoff current	I _{EO}	—	—	0.5	μA	V _{EB} =4V
Collector-emitter saturation voltage	V _{CE(sat)}	—	0.2	0.4	V	I _C /I _E =500mA/50mA
DC current transfer ratio	h _{FE}	82	—	390	—	V _{CE} /I _C =3V/0.1A
Transition frequency	f _T	—	120	—	MHz	V _{CE} =10V, I _E =−50mA, f=100MHz
Output capacitance	C _{ob}	—	—	10	pF	V _{CB} =10V, I _E =0A, f=1MHz

(96-750-D13)