Medium Power Transistor (32V, 0.8A) 2SD1781K

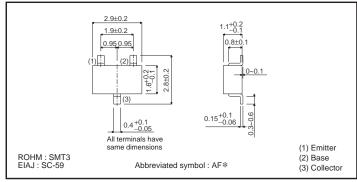
● Features

- 1) Very Low VcE(sat). VcE(sat) = -0.1V(Typ.) (Ic / Ib= 500mA / 50mA)
- 2) High current capacity in compact package.
- 3) Complements the 2SB1197K.

Structure

Epitaxial planar type NPN silicon transistor

●External dimensions (Unit : mm)



* Denotes hre

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●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	Vсво	40	V
Collector-emitter voltage	VCEO	32	V
Emitter-base voltage	Vево	5	V
Collector current	lc	0.8	A (DC)
	ICP	1.5	A (Pulse) *
Collector power dissipation	Pc	200	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55 to +150	°C

^{*} Single pulse Pw=100ms

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Collector-base breakdown voltage	ВУсво	40	-	-	V	Ic=50μA
Collector-emitter breakdown voltage	BVceo	32	-	-	V	Ic=1mA
Emitter-base breakdown voltage	ВУЕВО	5	-	-	V	Iε=50μA
Collector cutoff current	Ісво	-	-	0.5	μΑ	Vcb=20V
Emitter cutoff current	ІЕВО	-	_	0.5	μΑ	V _{EB} =4V
Collector-emitter saturation voltage	VCE(sat)	-	0.1	0.4	V	Ic/Iв=500mA/50mA
DC current transfer ratio	hfe	120	_	390	-	VcE=3V, Ic=100mA
Transition frequency	f⊤	-	150	-	MHz	Vce=5V, Ie= -50mA, f=100MHz
Output capacitance	Cob	-	15	-	pF	Vcb=10V, Ie=0A, f=1MHz

Packaging specifications and hfe

		Package	Taping
		Code	T146
Туре	hfe	Basic ordering unit (pieces)	3000
2SD1781K	QR		0

hre values are classified as follows:

Item	Q	R	
hfe	120 to 270	180 to 390	

•Electrical characteristic curves

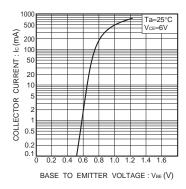


Fig.1 Grounded emitter propagation characteristics

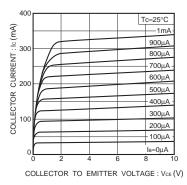


Fig.2 Grounded emitter output characteristics

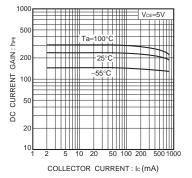


Fig.3 DC current gain vs. collector

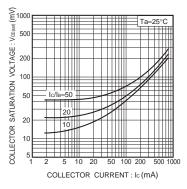


Fig.4 Collector-emitter saturation voltage vs. collector current (I)

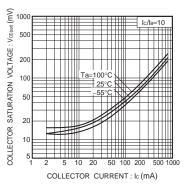


Fig.5 Collector-emitter saturation voltage vs. collector current (II)

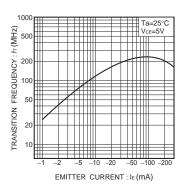


Fig.6 Gain bandwidth product vs. emitter current

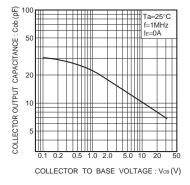


Fig.7 Collector output capacitance vs. collector-base voltage

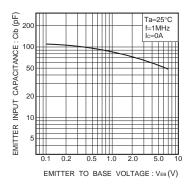


Fig.8 Emitter input capacitance vs. emitter-base voltage

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