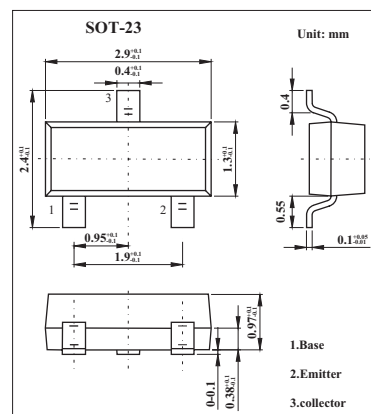


Medium Power Transistor

2SD1781K

■ Features

- Very Low $V_{CE(sat)}$. $V_{CE(sat)} = -0.1V(\text{Typ.})$ ($I_C / I_B = 500mA / 50mA$)
- High current capacity in compact package.



■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	40	V
Collector-emitter voltage	V_{CEO}	32	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	0.8	A
Collector current *	I_{CP}	1.5	
Collector power dissipation	P_C	200	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

* Single pulse $P_w=100\text{ms}$.

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	$I_C=50\mu\text{A}$	40			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C=1\text{mA}$	32			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E=50\mu\text{A}$	5			V
Collector cutoff current	I_{CBO}	$V_{CB}=20\text{V}$			0.5	μA
Emitter cutoff current	I_{EBO}	$V_{EB}=4\text{V}$			0.5	μA
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C/I_B=500\text{mA}/50\text{mA}$		0.1	0.4	V
DC current transfer ratio	h_{FE}	$V_{CE}=3\text{V}, I_C=100\text{mA}$	120		390	
Output capacitance	f_T	$V_{CE}=5\text{V}, I_E=-50\text{mA}, f=100\text{MHz}$		150		MHz
Transition frequency	C_{ob}	$V_{CB}=10\text{V}, I_E=0\text{A}, f=1\text{MHz}$		15		pF

■ h_{FE} Classification

Marking	AF	
	Q	R
h_{FE}	120~270	180~390