2SD1119 TRANSISTOR (NPN)

1.BASE
2.COLLECTOR
3.EMITTER

SOT-89

FEATURES

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Satisfactory operation performances at high efficiency with the low voltage power supply.

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector- Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current -Continuous	3	A
P_C	Collector Dissipation	500	mW
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~150	℃

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C =100μA, I_E=0	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C =1mA, I_B=0	25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	7			V
Collector cut-off current	I_{CBO}	V_{CB}=10V, I_E=0			0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=6V, I_C=0			0.1	μA
DC current gain	$h_{FE(1)}$	V_{CE}=2V, I_C=500mA	230		600	
	$h_{FE(2)}$	V_{CE}=2V, I_C=2A	150			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=3A, I_B=0.1A			1	V
Transition frequency	f_T	V_{CE}=6V, I_C=50mA, f=200MHz		150		MHz
Collector output capacitance	C_{ob}	V_{CB}=20V, f=1MHz			50	pF

CLASSIFICATION OF $h_{FE(1)}$

Rank	Q	R
Range	230-380	340-600
Marking	TQ	TR