



TO-92 Plastic-Encapsulate Transistors

M28S TRANSISTOR (NPN)

FEATURE

Power dissipation

P_{CM} : 0.625 W ($T_{amb}=25^{\circ}C$)

Collector current

I_{CM} : 1 A

Collector-base voltage

$V_{(BR)CBO}$: 40 V

Operating and storage junction temperature range

T_{stg} : $-55^{\circ}C$ to $+150^{\circ}C$

T_J : $150^{\circ}C$

TO-92

1. EMITTER

2. COLLECTOR

3. BASE



ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=0.1mA, I_E=0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	20			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=0.1mA, I_C=0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB}=40V, I_E=0$			1	μA
Collector cut-off current	I_{CEO}	$V_{CE}=20V, I_B=0$			5	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$			0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=1V, I_C=1mA$	290			
	$h_{FE(2)}$	$V_{CE}=1V, I_C=100mA$	300		1000	
	$h_{FE(3)}$	$V_{CE}=10V, I_C=300mA$	300			
	$h_{FE(4)}$	$V_{CE}=1V, I_C=500mA$	300			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=600mA, I_B=20mA$			0.55	V
Transition frequency	f_T	$V_{CE}=10V, I_C=50mA$ $f=30MHz$	100			MHz

CLASSIFICATION OF h_{FE}

Rank	B	C	D
Range	300-550	500-700	650-1000