

### 2SD2136 TRANSISTOR (NPN)

#### FEATURES

Power dissipation

$P_{CM}$ : 1.25 W ( $T_{amb}=25^{\circ}C$ )

Collector current

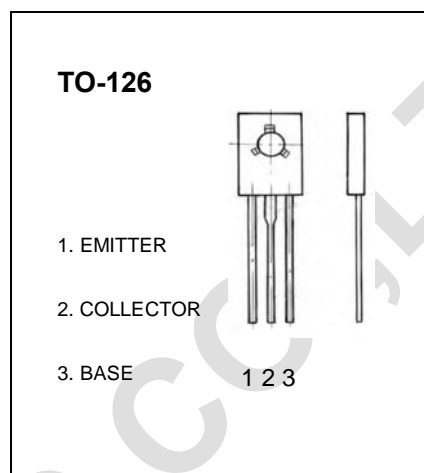
$I_{CM}$ : 3 A

Collector-base voltage

$V_{(BR)CBO}$ : 60 V

Operating and storage junction temperature range

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



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

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=30mA, I_B=0$	60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0$	6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=60V, I_E=0$			200	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=6V, I_C=0$			1	mA
DC current gain	$h_{FE(1)}$	$V_{CE}=4V, I_C=1A$	40		250	
	$h_{FE(2)}$	$V_{CE}=4V, I_C=3A$	10			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=3A, I_B=375mA$			1.2	V
Base-emitter voltage	$V_{BE}$	$V_{CE}=4V, I_C=3A$			1.8	V
Transition frequency	$f_T$	$V_{CE}=5V, I_C=0.1A, f=200MHz$		30		MHz
Switch Time	Turn-on time	$t_{on}$		0.5		$\mu s$
	Storage time	$t_{stg}$	$I_C=1A, I_{B1}=0.1A, I_{B2}=-0.1A$	2.5		$\mu s$
	Fall time	$t_f$		0.4		$\mu s$

#### CLASSIFICATION OF $h_{FE(1)}$

Rank	P	Q	R
Range	40-90	70-150	120-250