

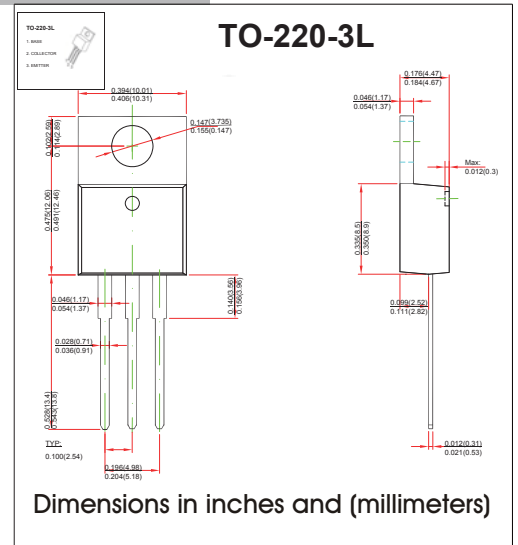
## TO-220-3L Plastic-Encapsulate Transistors

### FEATURES

- High Forward Current Transfer Ratio  $h_{FE}$  which Has
- Low Collector to Emitter Saturation Voltage  $V_{CE(sat)}$
- TRANSISTOR (NPN)
- Allowing Supply with the Radial Taping

### MECHANICAL DATA

- Case style: TO-220-3L molded plastic
- Mounting position: any



### MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	60	V
$V_{CEO}$	Collector-Emitter Voltage	60	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current -Continuous	3	A
$P_C$	Collector Power Dissipation	2	W
$T_J$	Junction Temperature	150	°C
$T_{stg}$	Storage Temperature	-55-150	°C

#### PACKAGE INFORMATION

Device	Package	Shipping
2SD2137	TO-220-3L	50/Tape&Reel

Parameter	Symbol	Test conditions	Min	Typ	Max	
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=0.1mA, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=30mA, I_B=0$	60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=0.1mA, I_C=0$	6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=60V, I_E=0$			100	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=6V, I_C=0$			100	$\mu A$
DC current gain	$h_{FE(1)}$	$V_{CE}=4V, I_C=1A$	70		320	
	$h_{FE(2)}$	$V_{CE}=4V, I_C=3A$	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	$f_T$	$V_{CE}=5V, I_C=0.2A, f=10MHz$		30		MHz
Switch time	Turn-on time	$t_{on}$		0.3		$\mu s$
	Storage time	$t_{stg}$	$V_{CC}=50V, I_C=1A, I_{B1}=-I_{B2}=0.1A$	2.5		$\mu s$
	Fall time	$t_f$		0.2		$\mu s$

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

Rank	Q	P	O
Range	70-150	120-250	160-320