

SPTECH Silicon NPN Power Transistor

BD239/A/B/C

DESCRIPTION

- DC Current Gain $-h_{FE} = 40(\text{Min})@ I_C = 0.2A$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(\text{SUS})} = 45V(\text{Min})$ - BD239; $60V(\text{Min})$ - BD239A
80V(Min)- BD239B; $100V(\text{Min})$ - BD239C
- Complement to Type BD240/A/B/C

APPLICATIONS

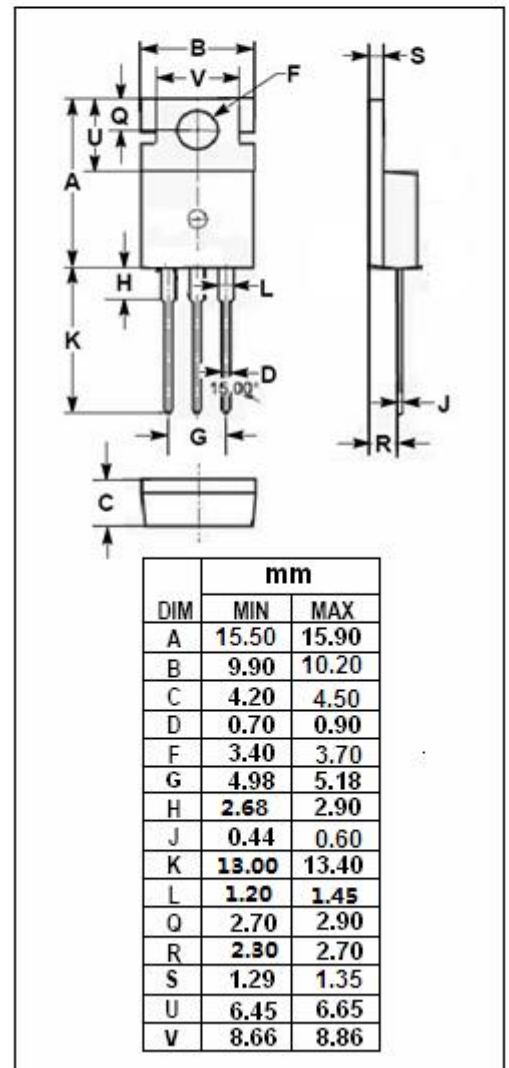
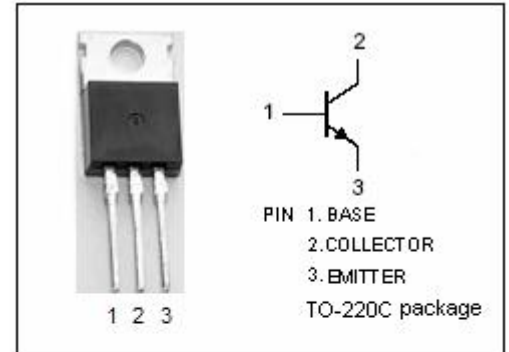
- Designed for medium power linear and switching applications.

ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CE}	Collector-Emitter Voltage	BD239	55
		BD239A	70
		BD239B	90
		BD239C	115
V_{CEO}	Collector-Emitter Voltage	BD239	45
		BD239A	60
		BD239B	80
		BD239C	100
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	2	A
I_{CM}	Collector Current-Peak	4	A
I_B	Base Current	0.6	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	30	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	4.17	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	MAX	UNIT
$V_{CEQ(SUS)}$	Collector-Emitter Sustaining Voltage	BD239	$I_C = 30\text{mA}; I_B = 0$	45		V
		BD239A		60		
		BD239B		80		
		BD239C		100		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		$I_C = 1\text{A}; I_B = 0.2\text{A}$		0.7	V
$V_{BE(on)}$	Base-Emitter On Voltage		$I_C = 1\text{A}; V_{CE} = 4\text{V}$		1.3	V
I_{CES}	Collector Cutoff Current	BD239	$V_{CE} = 45\text{V}; V_{BE} = 0$		0.2	mA
		BD239A	$V_{CE} = 60\text{V}; V_{BE} = 0$			
		BD239B	$V_{CE} = 80\text{V}; V_{BE} = 0$			
		BD239C	$V_{CE} = 100\text{V}; V_{BE} = 0$			
I_{CEO}	Collector Cutoff Current	BD239/A	$V_{CE} = 30\text{V}; I_B = 0$		0.3	mA
		BD239B/C	$V_{CE} = 60\text{V}; I_B = 0$			
I_{EBO}	Emitter Cutoff Current		$V_{EB} = 5\text{V}; I_C = 0$		1.0	mA
h_{FE-1}	DC Current Gain		$I_C = 0.2\text{A}; V_{CE} = 4\text{V}$	40		
h_{FE-2}	DC Current Gain		$I_C = 1\text{A}; V_{CE} = 4\text{V}$	15		