

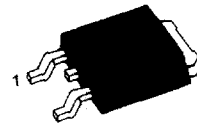
### D-PACK FOR SURFACE MOUNT APPLICATIONS

- High DC Current Gain
- Built-in a Damper Diode at E-C
- Lead Formed for Surface Mount Applications (No Suffix)
- Straight Lead (I. PACK, \* -I\* Suffix)
- Electrically Similar to Popular TIP117

### ABSOLUTE MAXIMUM RATINGS

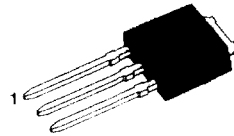
Characteristic	Symbol	Rating	Unit
Collector Base Voltage	$V_{CBO}$	- 100	V
Collector Emitter Voltage	$V_{CEO}$	- 100	V
Emitter Base Voltage	$V_{EBO}$	- 5	V
Collector Current (DC)	$I_C$	- 2	A
Collector Current (Pulse)	$I_C$	- 4	A
Base Current	$I_B$	- 50	mA
Collector Dissipation ( $T_c=25^\circ\text{C}$ )	$P_C$	20	W
Collector Dissipation ( $T_A=25^\circ\text{C}$ )	$P_C$	1.75	W
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-65 ~ 150	$^\circ\text{C}$

D-PAK



1. Base 2. Collector 3. Emitter

I-PAK



1. Base 2. Collector 3. Emitter

### ELECTRICAL CHARACTERISTICS ( $T_c=25^\circ\text{C}$ )

Characteristic	Symbol	Test Conditions	Min	Max	Unit
* Collector Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = -30\text{mA}, I_B = 0$	- 100		V
Collector Cutoff Current	$I_{CEO}$	$V_{CE} = -50\text{V}, I_B = 0$		- 20	$\mu\text{A}$
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = -100\text{V}, I_E = 0$		- 20	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = -5\text{V}, I_C = 0$		- 2	mA
* DC Current Gain	$h_{FE}$	$V_{CE} = -3\text{V}, V_{EB} = -0.5\text{A}$	500		
		$V_{CE} = -3\text{V}, V_{EB} = -2\text{A}$	1000	12K	
		$V_{CE} = -3\text{V}, I_C = -4\text{A}$	200		
* Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -2\text{A}, I_B = -8\text{mA}$		- 2	V
		$I_C = -4\text{A}, I_B = -40\text{mA}$		- 3	V
* Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -4\text{A}, I_B = -40\text{mA}$		- 4	V
* Base Emitter On Voltage	$V_{BE(on)}$	$V_{CE} = -3\text{A}, I_C = -2\text{A}$		- 2.8	V
Current Gain Bandwidth Product	$f_T$	$V_{CE} = -10\text{V}, I_C = -0.75\text{A}$	25		MHz
		$f = 1\text{MHz}$			
Output Capacitance	$C_{OB}$	$V_{CB} = -10\text{V}, I_E = 0$		200	pF
		$f = 0.1\text{MHz}$			

\* Pulse Test :  $PW \leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

