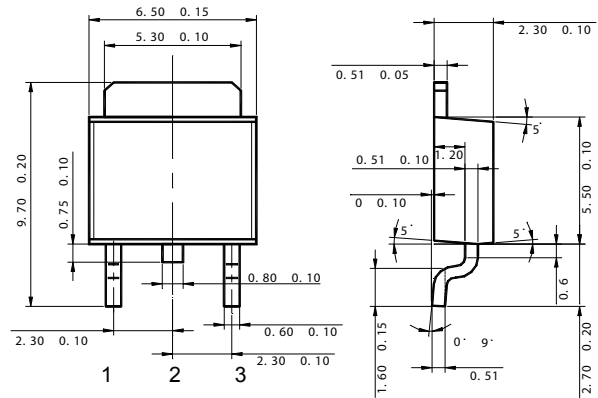


RoHS Compliant Product

TO-252(D-Pack)

**FEATURES**

- Power Dissipation  
 $P_{CM}$ : 10 W ( $T_a = 25\text{ }^\circ\text{C}$ )
- Collector Current  
 $I_{CM}$ : -3 A
- Collector-Base Voltage  
 $V_{(BR)CBO}$ : -40 V (min)
- Designed for use in output stage of 10W amplifier, voltage regulature, DC-DC converter and relay driver.



1. BASE
2. COLLECTOR
3. EMITTER

**ABSOLUTE MAXIMUM RATINGS ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)**

Parameter	Symbol	Value	Units
Collector-Base Voltage	$V_{CBO}$	-40	V
Collector-Emitter Voltage	$V_{CEO}$	-30	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-3	A
Collector Current (Pulse)	$I_C$	-7	A
Base Current	$I_B$	-0.6	A
Collector Power Dissipation	$P_D$	10	W
Junction, Storage Temperature	$T_J, T_{STG}$	150, -55~150	$^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -100\mu\text{A}, I_E = 0$	-40			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, I_B = 0$	-30			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0$	5			V
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = -30\text{V}, I_E = 0$			-1	$\mu\text{A}$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = -3\text{V}, I_C = 0$			-1	$\mu\text{A}$
DC Current Gain	$*h_{FE1}$	$V_{CE} = -2\text{V}, I_C = -20\text{mA}$	30			
DC Current Gain	$*h_{FE2}$	$V_{CE} = -2\text{V}, I_C = -1\text{A}$	100		500	
Collector-Emitter Saturation Voltage	$*V_{CE(sat)}$	$I_C = -2\text{A}, I_B = -0.2\text{A}$		-0.3	-0.5	V
Base-Emitter Voltage	$*V_{BE(sat)}$	$I_C = -2\text{A}, I_B = -0.2\text{A}$		-1	-2	V
Collector Power Dissipation	$C_{ob}$	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$		55		pF
Transition Frequency	$f_T$	$V_{CE} = -5\text{V}, I_C = -0.1\text{A}, f = 100\text{MHz}$		80		MHz

\*Pulse Test: Pulse Width  $\leq 380\text{ms}$ , Duty Cycle  $\leq 2\%$

**$h_{FE}$  VALUES ARE CLASSIFIED AS FOLLOWS:**

ITEM	Q	P	E
$h_{FE}$	100 ~ 200	160 ~ 320	250 ~ 320

## ● ELECTRICAL CHARACTERISTIC CURVES

