

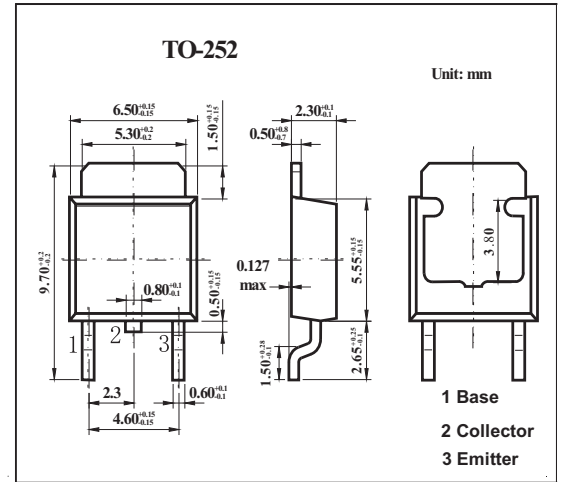
TO-252 Plastic-Encapsulate Transistors

Features

- Lead Formed for Surface Mount Applications in Plastic
- Sleeves Pb-Free Packages are Available
- Complementary Power Transistors

MECHANICAL DATA

- Case style: TO-252 molded plastic
- Mounting position: any



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Rating	Unit	
Collector-emitter voltage	MJD31, MJD32 MJD31C, MJD32C	V _{CEO}	40	V
			100	V
Collector-base voltage	MJD31, MJD32 MJD31C, MJD32C	V _{CB}	40	V
			100	V
Emitter-base voltage	V _{EB}	5	V	
Collector current	I _C	3	A	
Collector current (pulse)	I _{CP}	5	A	
Base current	I _B	1	A	
Total Device Dissipation FR-5 Board @T _A = 25°C	P _D	15	W	
Derate above 25°C		0.12	W/°C	
Total Device Dissipation Alumina Substrate @T _A = 25°C	P _D	1.56	W	
Derate above 25°C		0.012	W/°C	
Junction temperature	T _J	150	°C	
Storage temperature	T _{stg}	-65 to +150	°C	
Thermal Resistance, Junction-to-Case	R _{θJC}	8.3	°C/W	
Thermal Resistance, Junction-to-Ambient	R _{θJA}	80	°C/W	
Lead Temperature for Soldering Purposes	TL	260	°C	

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-emitter sustaining voltage	MJD31, MJD32 MJD31C, MJD32C	V _{CE(sus)} I _C = 30 mA, I _B = 0	40			V
			100			V
Collector cutoff current	MJD31, MJD32 MJD31C, MJD32C	I _{CEO} V _{CE} = 40 V, I _B = 0			50	μA
					50	μA
Collector cutoff current	I _{CES}	V _{CE} = Rated V _{CEO} , V _{EB} = 0			20	μA
Emitter cutoff current	I _{EBO}	V _{BE} = 5V, I _C = 0			1	mA
DC current gain *	h _{FE}	I _C = 1 A, V _{CE} = 4 V	25			
			I _C = 3 A, V _{CE} = 4 V	10		50
Collector-emitter saturation voltage *	V _{CE(sat)}	I _C = 3 A, I _B = 375 mA			1.2	V
Base-emitter saturation voltage *	V _{BE(on)}	I _C = 3 A, V _{CE} = 4 V			1.8	V
Current-gain-bandwidth product *2	f _T	I _C = 500 mA, V _{CE} = 10 V, f _{test} = 1 MHz	3			MHz
Small-signal current gain	h _{fe}	I _C = 0.5 A, V _{CE} = 10 V, f = 1 kHz	20			

*1 Pulse test: pulse width ≤ 300 μs, duty cycle ≤ 2.0%.

*2 f_T = |h_{fe}| f_{test}

h_{FE} Classification

TYPE	MJD31	MJD31C	MJD32	MJD32C
Marking	J31	J31C	J32	J32C