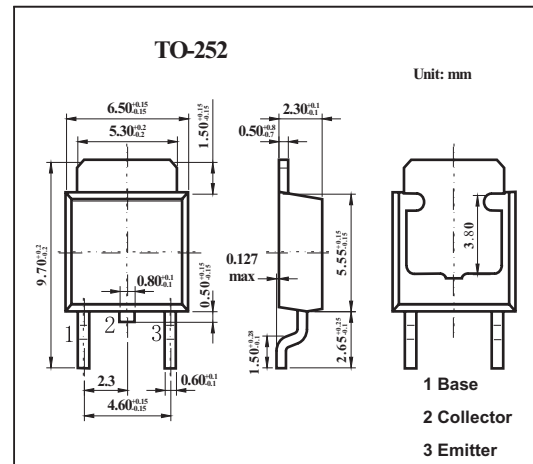


MJD31,MJD31C(NPN)
MJD32,MJD32C(PNP)

■ Features

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



■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

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 @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	15	W	
		0.12	W/ $^\circ\text{C}$	
Total Device Dissipation Alumina Substrate @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	1.56	W	
		0.012	W/ $^\circ\text{C}$	
Junction temperature	T_j	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	-65 to +150	$^\circ\text{C}$	
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	8.3	$^\circ\text{C}/\text{W}$	
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	80	$^\circ\text{C}/\text{W}$	
Lead Temperature for Soldering Purposes	TL	260	$^\circ\text{C}$	

MJD31,MJD31C(NPN)
MJD32,MJD32C(PNP)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector-emitter sustaining voltage MJD31,MJD32 MJD31C,MJD32C	VCEo(sus)	Ic = 30 mA, IB = 0	40			V
			100			V
Collector cutoff current MJD31,MJD32 MJD31C,MJD32C	ICEO	VCE = 40 V, IB = 0			50	μA
		VCE = 60 V, IB = 0			50	μA
Collector cutoff current	ICES	VCE = Rated VCEO, VEB = 0			20	μA
Emitter cutoff current	IEBO	VBE = 5V, Ic = 0			1	mA
DC current gain *	hFE	Ic = 1 A, VCE = 4 V	25			
		Ic = 3 A, VCE = 4 V	10		50	
Collector-emitter saturation voltage *	VCE(sat)	Ic = 3 A, IB = 375 mA			1.2	V
Base-emitter saturation voltage *	VBE(on)	Ic = 3 A, VCE = 4 V			1.8	V
Current-gain-bandwidth product *2	fr	Ic = 500 mA, VCE = 10 V, ftest = 1 MHz	3			MHz
Small-signal current gain	hfe	Ic = 0.5 A, VCE = 10 V, f = 1 kHz	20			

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

*2 fr = | hfe | ftest

■ hFE Classification

TYPE	MJD31	MJD31C	MJD32	MJD32C
Marking	J31	J31C	J32	J32C