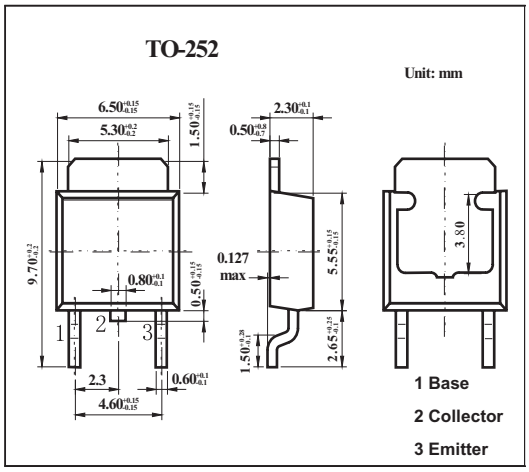
Complementary Power Transistors

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



■ Features

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

■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Collector-emitter voltage	MJD31,MJD32	V_{CEO}	40	V
	MJD31C,MJD32C		100	V
Collector-base voltage	MJD31,MJD32	V_{CB}	40	V
	MJD31C,MJD32C		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℃ Derate above 25℃		P_D	 15 0.12	 W W/℃
Total Device Dissipation Alumina Substrate @T_A = 25℃ Derate above 25℃		P_D	 1.56 0.012	 W W/℃
Junction temperature		T_j	150	℃
Storage temperature		T_{stg}	-65 to +150	℃
Thermal Resistance, Junction-to-Case		$R_{\theta JC}$	8.3	℃/W
Thermal Resistance, Junction-to-Ambient		$R_{\theta JA}$	80	℃/W
Lead Temperature for Soldering Purposes		TL	260	℃

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector-emitter sustaining voltage MJD31,MJD32	$V_{CEo(sus)}$	I_C = 30 mA, I_B = 0	40			V
MJD31C,MJD32C			100			V
Collector cutoff current MJD31,MJD32	I_{CEO}	V_{CE} = 40 V, I_B = 0			50	μA
MJD31C,MJD32C		V_{CE} = 60 V, I_B = 0			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