

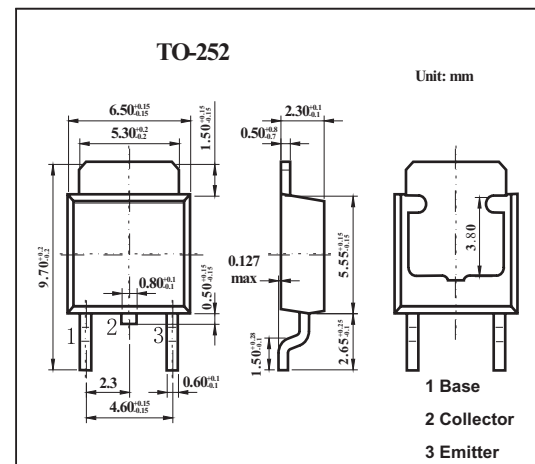
Complementary Power Transistors

MJD41C(NPN)

MJD42C(PNP)

■ Features

- Lead Formed for Surface Mount Applications in Plastic Sleeves
- Monolithic Construction With Built-in Base & Emitter Resistors
- Pb-Free Packages are Available

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

Parameter	Symbol	Rating	Unit
Collector-emitter voltage	V_{CEO}	100	V
Collector-base voltage	V_{CB}	100	V
Emitter-base voltage	V_{EB}	5	V
Collector current	I_C	6	A
Collector current (pulse)	I_{CP}	10	A
Base current	I_B	2	A
Total Device Dissipation FR-5 Board @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	20 0.16	W W/ $^\circ\text{C}$
Total Device Dissipation Alumina Substrate @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	1.75 0.014	W 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	$R_{\theta JC}$	6.25	$^\circ\text{C/W}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	71.4	$^\circ\text{C/W}$

MJD41C(NPN)

MJD42C(PNP)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-emitter sustaining voltage	$V_{CE(sus)}$	$I_C = 30\text{ mA}, I_B = 0$	100			V
Collector cutoff current	I_{CEO}	$V_{CE} = 60\text{ V}, I_B = 0$			50	μA
Collector cutoff current	I_{CES}	$V_{CE} = 100\text{ V}, V_{EB} = 0$			10	μA
Emitter cutoff current	I_{EBO}	$V_{BE} = 5\text{ V}, I_C = 0$			0.5	mA
DC current gain *	h_{FE}	$I_C = 0.3\text{ A}, V_{CE} = 4\text{ V}$	30			
		$I_C = 3\text{ A}, V_{CE} = 4\text{ V}$	15		75	
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = 6\text{ A}, I_B = 600\text{ mA}$			1.5	V
Base-emitter saturation voltage *	$V_{BE(on)}$	$I_C = 6\text{ A}, V_{CE} = 4\text{ V}$			2	V
Current-gain-bandwidth product *2	f_T	$I_C = 500\text{ mA}, V_{CE} = 10\text{ V}, f_{test} = 1\text{ MHz}$	3			MHz
Small-signal current gain	h_{fe}	$I_C = 0.5\text{ A}, V_{CE} = 10\text{ V}, f = 1\text{ kHz}$	20			

*1 Pulse test: pulse width $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2.0\%$.

*2 $f_T = |h_{fe}| \cdot f_{test}$

■ hFE Classification

TYPE	MJD41C	MJD42C
Marking	J41C	J42C