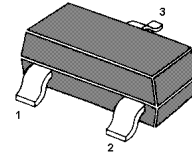


MMBT2369 / MMBT2369A

NPN Silicon Switching Transistor

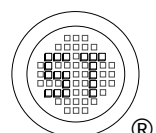


1. Base 2. Emitter 3. Collector
TO-236 Plastic Package

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	40	V
Collector Emitter Voltage	V_{CEO}	15	V
Collector Emitter Voltage	V_{CES}	40	V
Emitter Base Voltage	V_{EBO}	4.5	V
Collector Current Continuous	I_C	200	mA
Total Device Dissipation FR-5 Board ¹⁾	P_{tot}	225	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Junction and Storage Temperature Range	T_J, T_{Stg}	-55 to +150	$^\circ\text{C}$

¹⁾ FR-5=1×0.75×0.062 in.



MMBT2369 / MMBT2369A

Characteristics at $T_{amb}=25^{\circ}\text{C}$

Parameter		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain						
at $V_{CE} = 1\text{ V}$, $I_C = 10\text{ mA}$	MMBT2369	h_{FE}	40	-	120	-
at $V_{CE} = 1\text{ V}$, $I_C = 10\text{ mA}$	MMBT2369A	h_{FE}	-	-	120	-
at $V_{CE} = 0.35\text{ V}$, $I_C = 10\text{ mA}$	MMBT2369A	h_{FE}	40	-	-	-
at $V_{CE} = 0.35\text{ V}$, $I_C = 10\text{ mA}$, $T_A = -55^{\circ}\text{C}$	MMBT2369A	h_{FE}	20	-	-	-
at $V_{CE} = 0.4\text{ V}$, $I_C = 30\text{ mA}$	MMBT2369A	h_{FE}	30	-	-	-
at $V_{CE} = 2\text{ V}$, $I_C = 100\text{ mA}$	MMBT2369	h_{FE}	20	-	-	-
at $V_{CE} = 1\text{ V}$, $I_C = 100\text{ mA}$	MMBT2369A	h_{FE}	20	-	-	-
Collector Emitter Saturation Voltage						
at $I_C = 10\text{ mA}$, $I_B = 1\text{ mA}$	MMBT2369	V_{CEsat}	-	-	0.25	V
at $I_C = 10\text{ mA}$, $I_B = 1\text{ mA}$	MMBT2369A	V_{CEsat}	-	-	0.2	
at $I_C = 10\text{ mA}$, $I_B = 1\text{ mA}$, $T_A = +125^{\circ}\text{C}$	MMBT2369A	V_{CEsat}	-	-	0.3	
at $I_C = 30\text{ mA}$, $I_B = 3.0\text{ mA}$	MMBT2369A	V_{CEsat}	-	-	0.25	
at $I_C = 100\text{ mA}$, $I_B = 10\text{ mA}$	MMBT2369A	V_{CEsat}	-	-	0.5	
Base Emitter Saturation Voltage						
at $I_C = 10\text{ mA}$, $I_B = 1\text{ mA}$	MMBT2369A	V_{BEsat}	0.7	-	0.85	V
at $I_C = 10\text{ mA}$, $I_B = 1\text{ mA}$, $T_A = -55^{\circ}\text{C}$	MMBT2369A	V_{BEsat}	-	-	1.02	
at $I_C = 30\text{ mA}$, $I_B = 3\text{ mA}$	MMBT2369A	V_{BEsat}	-	-	1.15	
at $I_C = 100\text{ mA}$, $I_B = 10\text{ mA}$	MMBT2369A	V_{BEsat}	-	-	1.60	
Collector Cutoff Current at $V_{CE} = 20\text{ V}$	MMBT2369A	I_{CES}	-	-	0.4	μA
Collector Cutoff Current at $V_{CB} = 20\text{ V}$		I_{CBO}	-	-	0.4	μA
Collector Emitter Breakdown Voltage at $I_C = 10\text{ mA}$		$V_{(BR)CEO}$	15	-	-	V
Collector Base Breakdown Voltage at $I_C = 10\text{ }\mu\text{A}$		$V_{(BR)CBO}$	40	-	-	V
Collector Emitter Breakdown Voltage at $I_C = 10\text{ }\mu\text{A}$		$V_{(BR)CES}$	40	-	-	V
Emitter Base Breakdown Voltage at $I_E = 10\text{ }\mu\text{A}$		$V_{(BR)EBO}$	4.5	-	-	V
Output Capacitance at $V_{CB} = 5\text{ V}$, $f = 1\text{ MHz}$		C_{obo}	-	-	4	pF
Storage Time $I_{B1} = I_{B2} = I_C = 10\text{ mA}$		t_s	-	5.0	13	ns
Turn-On Time $V_{CC} = 3\text{ V}$, $I_C = 10\text{ mA}$, $I_{B1} = 3\text{ mA}$		t_{on}	-	8.0	12	ns
Turn-Off Time $V_{CC} = 3\text{ V}$, $I_C = 10\text{ mA}$, $I_{B1} = 3.0\text{ mA}$, $I_{B2} = 1.5\text{ mA}$		t_{off}	-	10	18	ns

