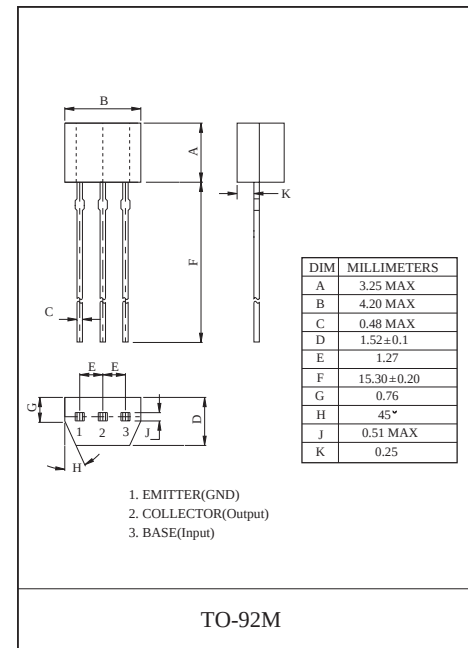


Bias Resistor Transistor

NPN Silicon Surface Mount Transistor with Monolithic Bias Resistor Network

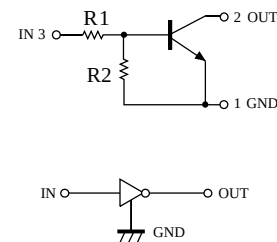
This new series of digital transistors is designed to replace a single device and its external resistor bias network. The BRT (Bias Resistor Transistor) contains a single transistor with a monolithic bias network resistor. The BRT eliminates these individual components by integrating them into a single device. The use of a BRT can reduce both system cost and board space.

- Simplifies Circuit Design
- Reduces Board Space and Component Count



Absolute maximum ratings(Ta=25°C)

Parameter	Symbol	Value	Unit
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	-5 ~ 12	V
Output current	I_O	100	mA
	$I_{C(MAX)}$	100	
Power dissipation	P_d	300	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55~150	°C



Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ	Max.	Unit	Conditions
Input voltage	$V_{(off)}$	0.5			V	$V_{CC}=5V, I_O=100\mu A$
	$V_{(on)}$			1.1		$V_O=0.3V, I_O=5mA$
Output voltage	$V_{O(on)}$		0.1	0.3	V	$I_O/I_I=5mA/0.25mA$
Input current	I_I			3.6	mA	$V_i=5V$
Output current	$I_{O(off)}$			0.5	μA	$V_{CC}=50V, V_i=0$
DC current gain	G_I	80				$V_O=5V, I_O=5mA$
Input resistance	R_1	1.54	2.2	2.86	k Ω	
Resistance ratio	R_2/R_1	17	21	26		
Transition frequency	f_T		250		MHz	$V_O=10V, I_O=5mA, f=100MHz$

Typical Characteristics

