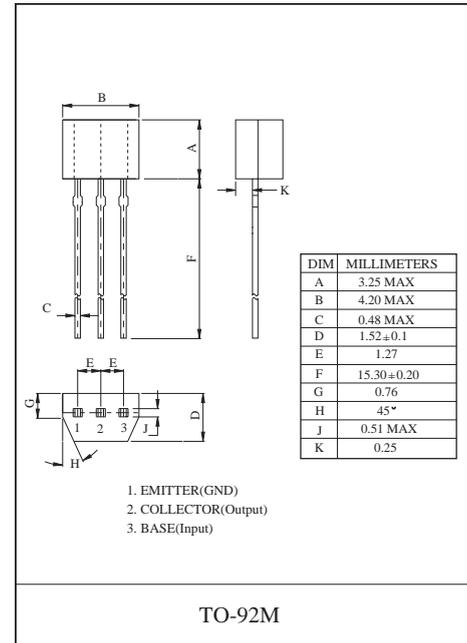


Bias Resistor Transistor

NPN Silicon Surface Mount Transistor with Monolithic Bias Resistor Network

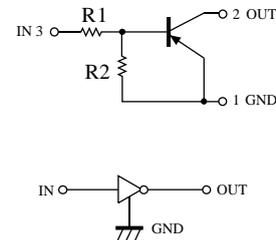
This new series of digital transistors is designed to replace a single device and its external resistor bias network. The BRT (Bias Resistor Transistor) contains a single transistor with a monolithic bias network resistor. The BRT eliminates these individual components by integrating them into a single 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}	-5	V
Input voltage	V_{IN}	-40~10	V
Output current	I_O	-50	mA
	$I_{C(MAX)}$	-100	
Power dissipation	P_d	300	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55~150	°C

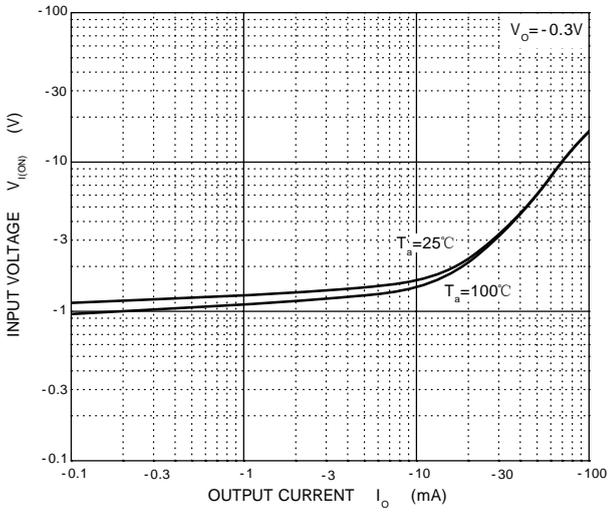


Electrical characteristics (Ta=25°C)

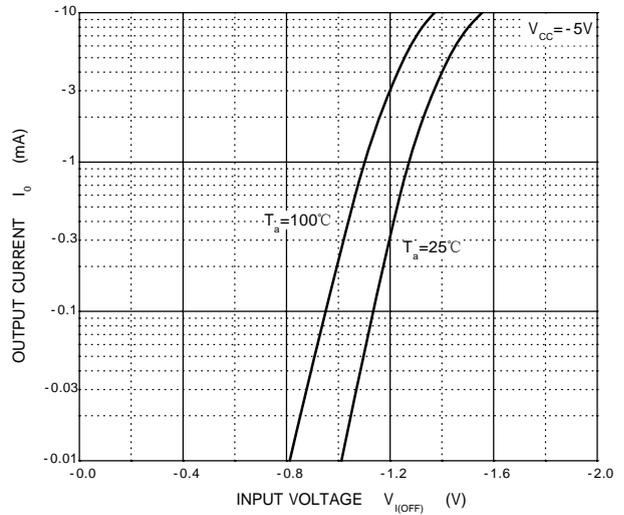
Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input voltage	$V_{(off)}$	-0.5			V	$V_{CC}=-5V, I_O=-100\mu A$
	$V_{(on)}$			-3		$V_O=-0.3V, I_O=-20mA$
Output voltage	$V_{O(on)}$			-0.3	V	$I_O/I_I=-10mA/-0.5mA$
Input current	I_I			-1.8	mA	$I_I=-5V$
Output current	$I_{O(off)}$			-0.5	uA	$V_{CC}=-50V, V_I=0$
DC current gain	G_I	30				$V_O=-5V, I_O=-10mA$
Input resistance	R_1	3.29	4.7	6.11	kΩ	
Resistance ratio	R_2/R_1	0.8	1	1.2		
Transition frequency	f_T		250		MHz	$V_O=-10V, I_O=5mA, f=100MHz$

Typical Characteristics

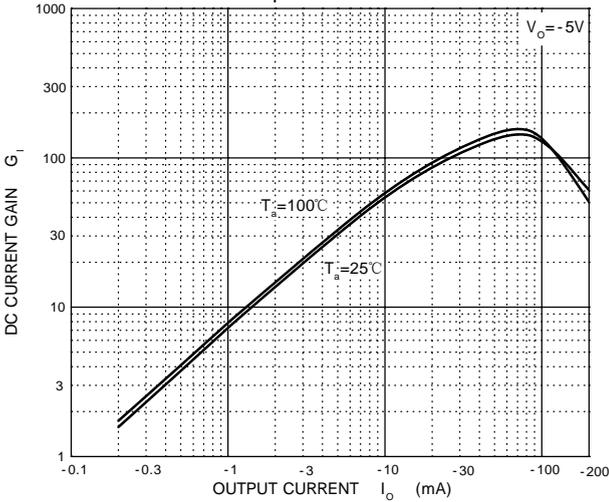
ON Characteristics



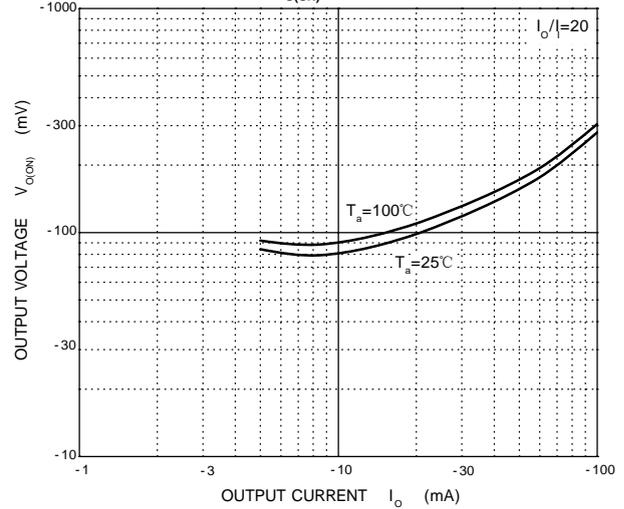
OFF Characteristics



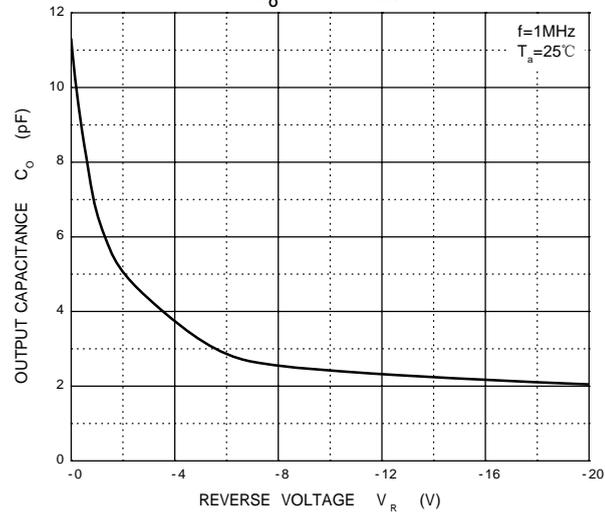
G_I — I_O



$V_{O(ON)}$ — I_O



C_O — VR



P_D — T_a

