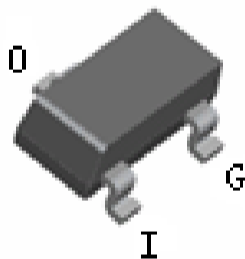


FEATURES

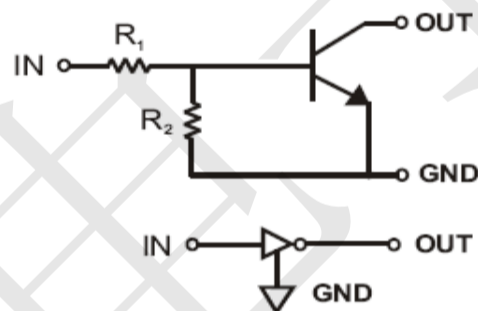
- Epitaxial planar die construction.
- Built-in biasing resistors, $R_1=R_2$
- Also available in lead free version.

APPLICATIONS

- The NPN style digital transistor.



SOT-23



Ordering Information

Part Number	Package	Shipping Quantity
TPDTC123ET	SOT-23	3000 pcs / Tape & Reel

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
V_{CC}	Supply Voltage	50	V
V_{IN}	Input Voltage	-10 to +12	V
I_O	Output Current	100	mA
$I_C(\text{Max.})$	Output current	100	mA
P_D	Power Dissipation(SOT-23)	200	mW
P_D	Power Dissipation(SOT-323)	200	mW
P_D	Power Dissipation(SOT-523)	150	mW
P_D	Power Dissipation(SOT-523)	150	mW
T_J, T_{stg}	Operating and Storage and Temperature Range	-55 to +150	°C

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Input Voltage	$V_{I(off)}$	$V_{CC}=5V, I_O=100\mu A$	-	-	0.5	V
Input Voltage	$V_{I(on)}$	$V_O=0.3V, I_O=20mA$	3	-	-	
Output Voltage	$V_{O(on)}$	$I_O/I_I=10mA/0.5mA,$	-	-	0.3	V
Input Current	I_I	$V_I=5V$	-	-	3.8	mA
Output Current	$I_{O(off)}$	$V_{CC}=50V, V_I=0V$	-	-	0.5	μA
DC Current Gain	G_I	$V_O=5V, I_O=20mA$	20	-	-	-
Input Resistor	$R_1(R_2)$		1.54	2.2	2.86	k Ω
Resistance Ratio	R_2/R_1		0.8	1	1.2	-
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_E=-5mA,$ $f=100MHz$	-	250	-	MHz

TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified

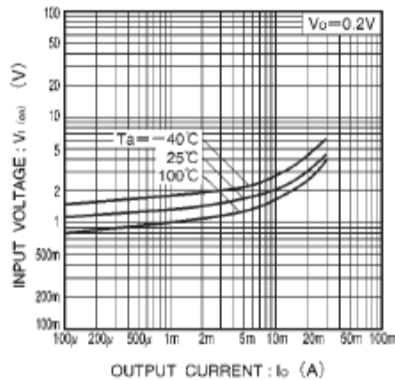


Fig.1 Input voltage vs. output current (ON characteristics)

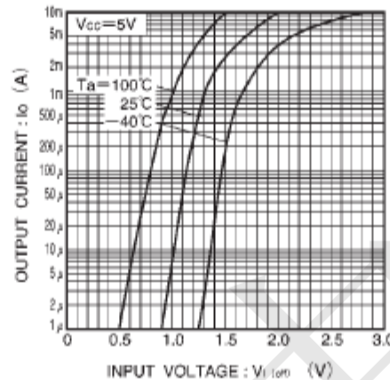


Fig.2 Output current vs. input voltage (OFF characteristics)

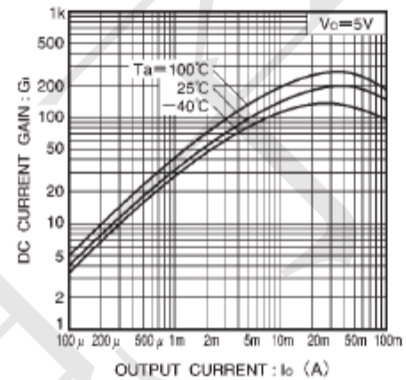


Fig.3 DC current gain vs. output current

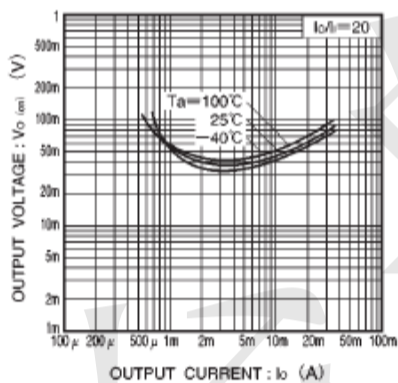
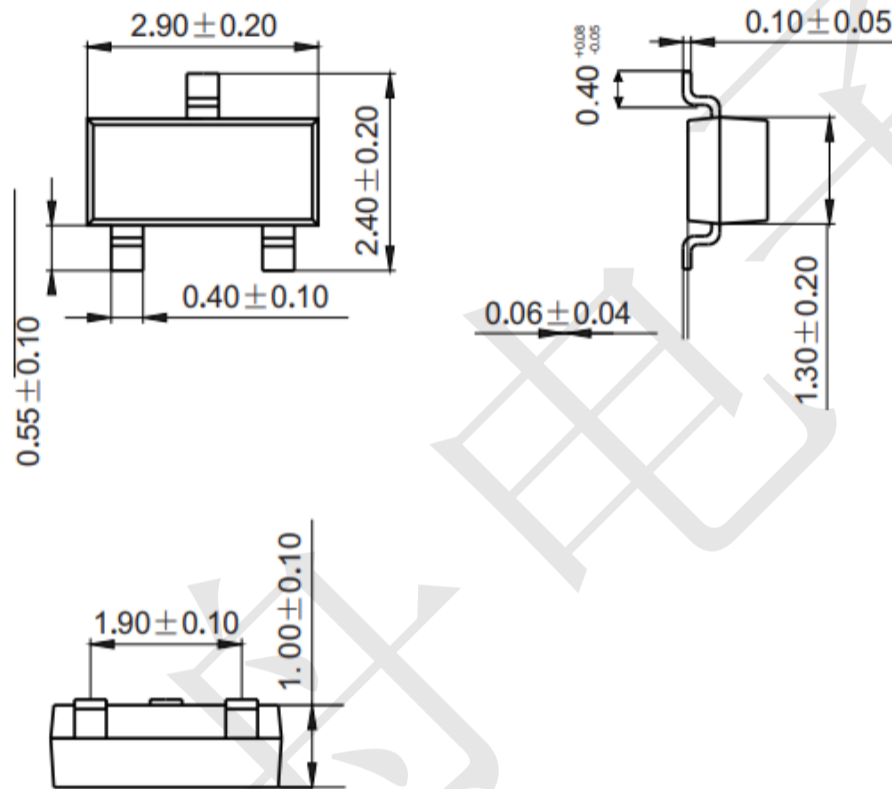


Fig.4 Output voltage vs. output current

Package information (Unit: mm)

SOT-23



Mounting Pad Layout (Unit: mm)

