

**Features**

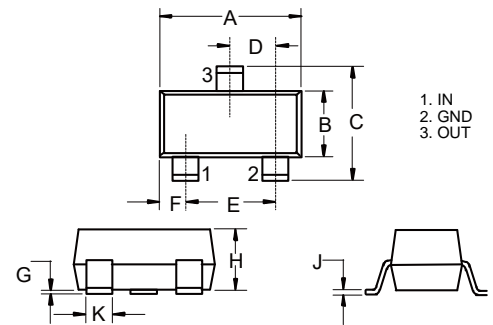
- Epitaxial Planar Die Construction
- Built-In Biasing Resistors
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

**NPN  
Digital Transistor**

**Maximum Ratings @ 25°C Unless Otherwise Specified**

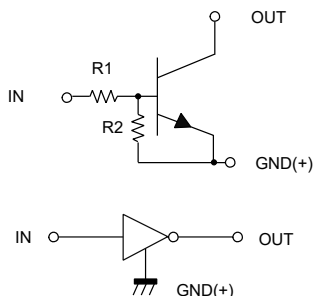
Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	$V_{CC}$	---	---	50	V
Input Voltage	$V_{IN}$	-10	---	30	V
Collector Current	$I_c$	---	100	---	mA
Power Dissipation	$P_D$	---	200	---	mW
Junction Temperature	$T_J$	---	---	150	°C
Storage Temperature	$T_{stg}$	-55	---	150	°C

**SOT-323**



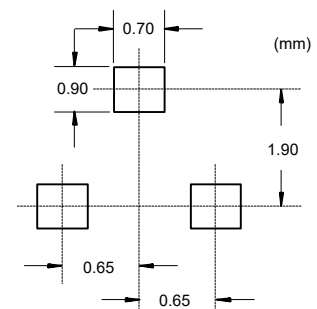
**Device Marking: 23**

**Internal Structure**



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.071	0.087	1.80	2.20	
B	0.045	0.053	1.15	1.35	
C	0.083	0.096	2.10	2.45	
D	0.026		0.65		TYP.
E	0.047	0.055	1.20	1.40	
F	0.012	0.016	0.30	0.40	
G	0.000	0.004	0.00	0.10	
H	0.035	0.044	0.90	1.10	
J	0.002	0.010	0.05	0.25	
K	0.006	0.016	0.15	0.40	

**Suggested Solder Pad Layout**



**Electrical Characteristics @ 25°C Unless Otherwise Specified**

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input Voltage	$V_{I(off)}$	0.5	---	---	V	$V_{CC}=5V, I_O=100\mu A$
	$V_{I(on)}$	---	---	3.0	V	$V_O=0.3V, I_O=20mA$
Output Voltage	$V_{O(on)}$	---	---	0.3	V	$I_O=10mA, I_I=0.5mA$
Input Current	$I_I$	---	---	1.8	mA	$V_I=5V$
Output Current	$I_{O(off)}$	---	---	0.5	$\mu A$	$V_{CC}=50V, V_I=0$
DC Current Gain	$G_I$	20	---	---		$V_O=5V, I_O=10mA$
Input Resistance	$R_1$	3.29	4.7	6.11	K $\Omega$	
Resistance Ratio	$R_2/R_1$	0.8	1.0	1.2		
Transition Frequency	$f_T$	---	250	---	MHz	$V_{CE}=10V, I_E=-5mA, f=100MHz$

Curve Characteristics

Fig. 1 - DC Current Gain Characteristics

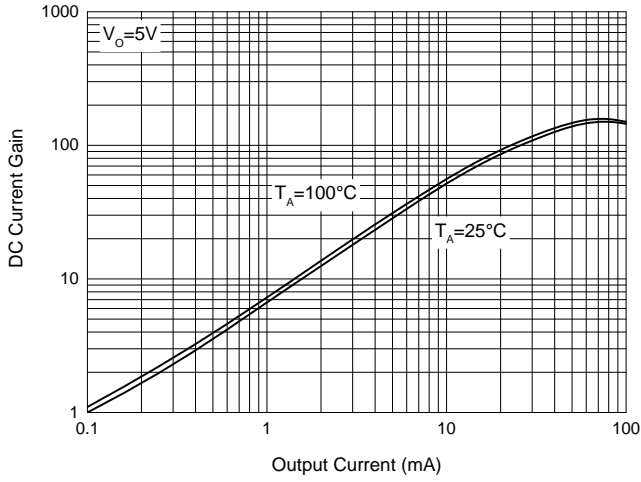


Fig. 2 - Input Voltage (on) Characteristics

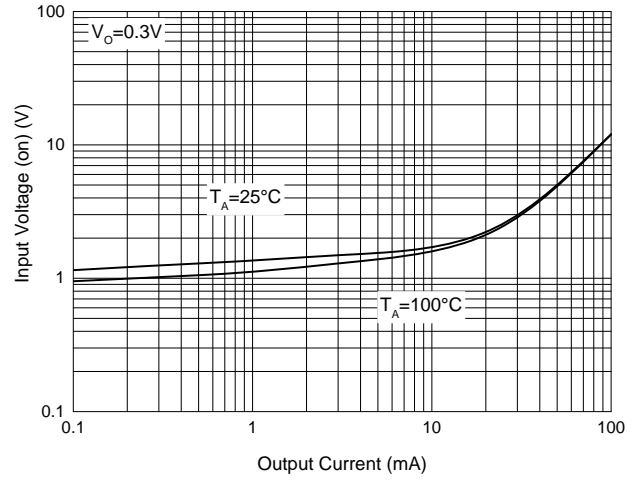


Fig. 3 - Input Voltage (off) Characteristics

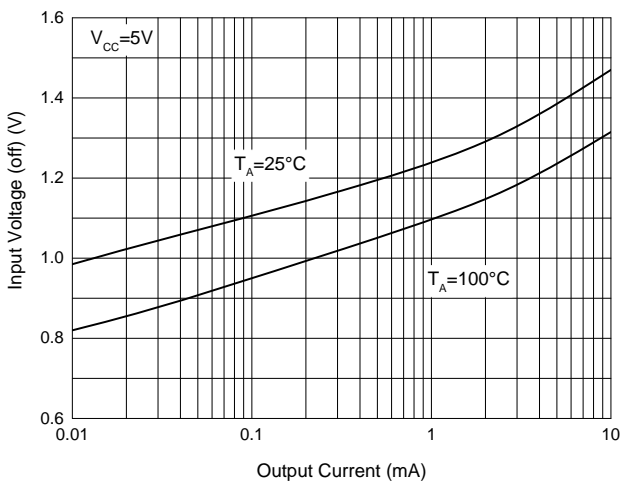


Fig. 4 - Output Voltage Characteristics

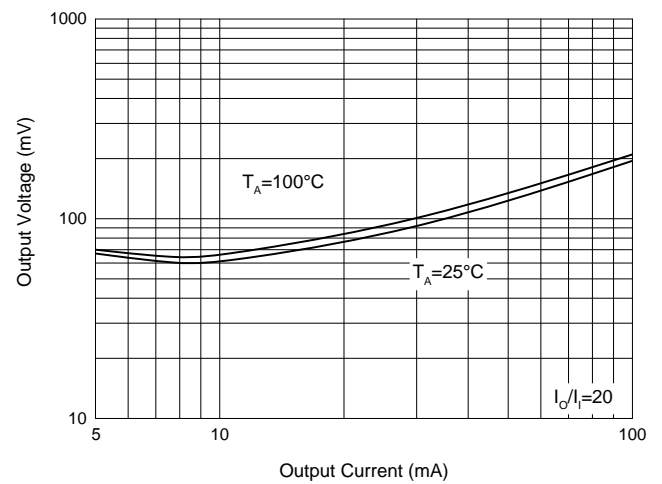
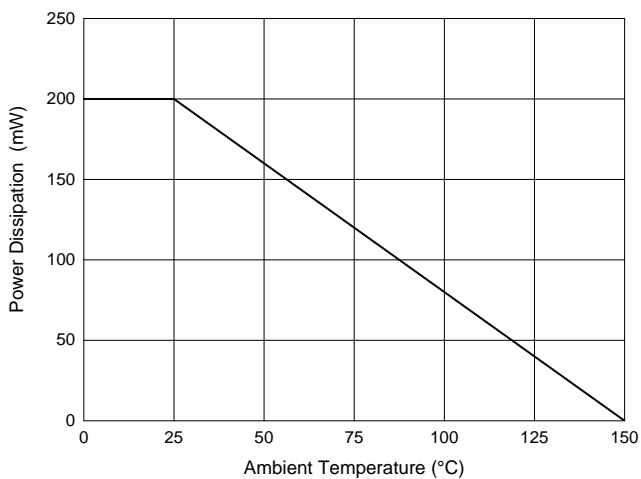


Fig. 5 - Power Derating Curve



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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