Features

- Epitaxial Planar Die Construction
- Built-In Biasing Resistors
- Halogen Free. "Green" Device (Note 1)
- AEC-Q101 Qualified
- 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

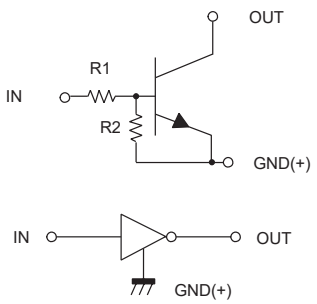
Maximum Ratings @ 25°C Unless Otherwise Specified

- Thermal Resistance: 625℃/W Junction to Ambient

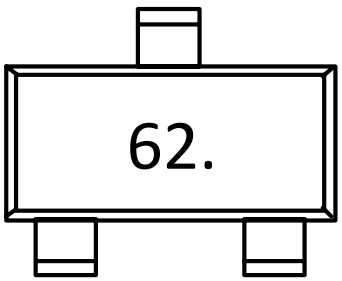
Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	-5~+12	V
Output Current	I_O	100	mA
Power Dissipation	P_D	200	mW
Junction Temperature	T_J	-55~+150	°C
Storage Temperature	T_{stg}	-55~+150	°C

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

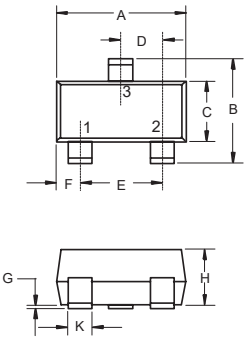
Internal Structure



Device Marking

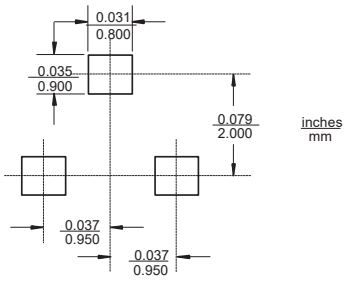


SOT-23



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51	
L	0.007	0.020	0.20	0.50	

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input Voltage	$V_{I(off)}$	0.3	---	---	V	V_{CC}=5V, I_O=100μA
	$V_{I(on)}$	---	---	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	---	---	3.8	mA	V_I=5V
Output Current	$I_{O(off)}$	---	---	0.5	μA	V_{CC}=50V, V_I=0
DC Current Gain	G_I	33	---	---		V_O=5V, I_O=10mA
Input Resistance	R_1	1.54	2.2	2.86	KΩ	
Resistance Ratio	R_2/R_1	3.6	4.5	5.5		
Transition Frequency	f_T	200	---	---	MHz	V_{CE}=10V, I_E=5mA, f=100MHz

Curve Characteristics

Fig. 1 - DC Current Gain Characteristics

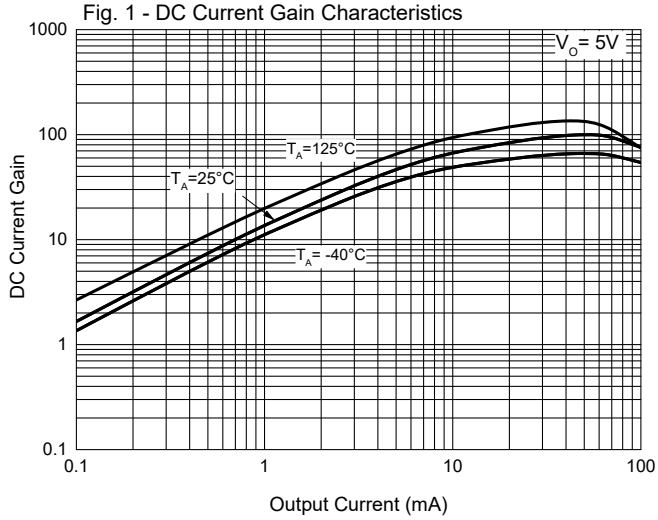


Fig. 2 - Input Voltage (on) Characteristics

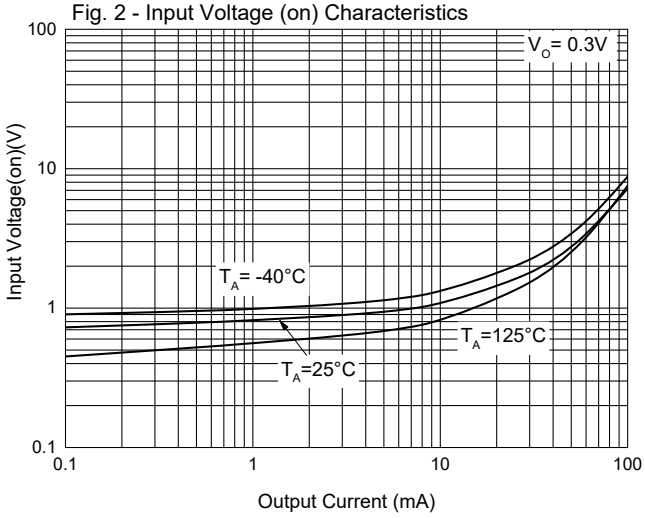


Fig. 3 - Input Voltage (off) Characteristics

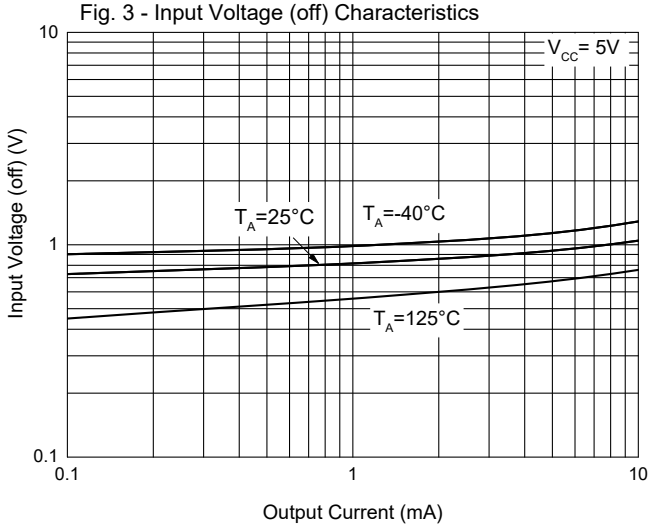


Fig. 4 - Output Voltage Characteristics

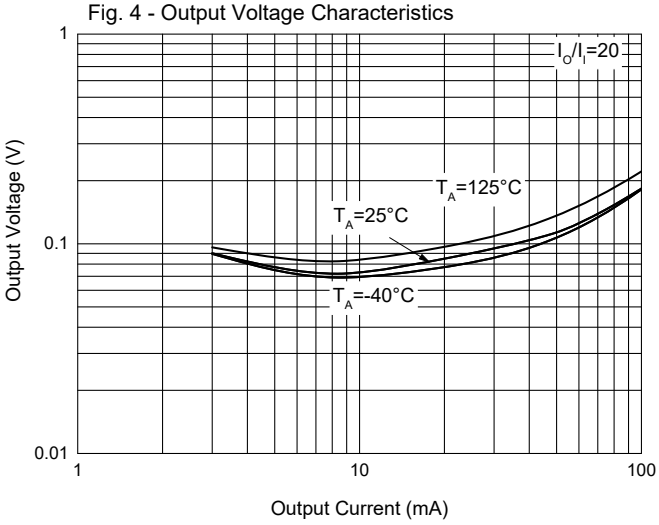
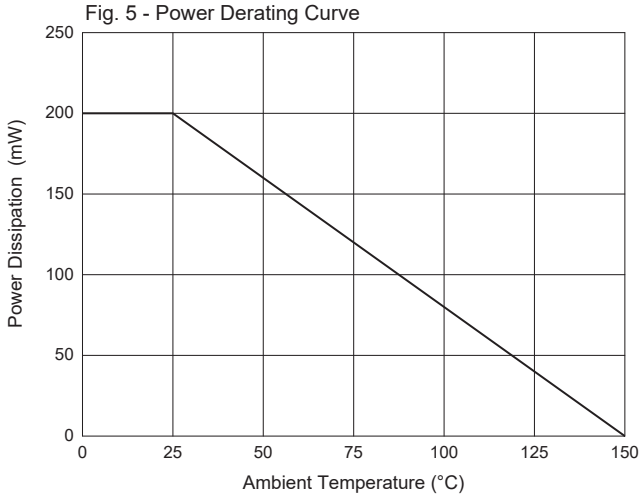


Fig. 5 - Power Derating Curve



Ordering Information

Device	Packing
DTC123YCAHE3-TP	Tape&Reel:3Kpcs/Reel

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