



Micro Commercial Components



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DTC143ECA

Digital Transistors

Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epitaxial Planar Die Construction
- Complementary PNP Types Available
- Built-In Biasing Resistors
- Marking: 23
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

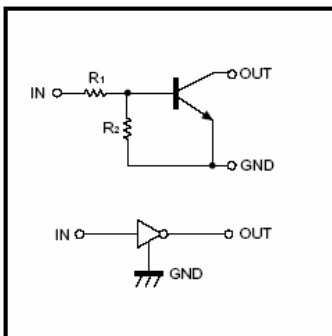
Absolute maximum ratings @ 25°C

Symbol	Parameter	Min	Typ	Max	Unit
V_{CC}	Supply Voltage	---	---	50	V
I_C	Collector current	---	100	---	mA
V_{IN}	Input voltage	-10	---	+30	V
P_d	Power dissipation	---	200	---	mW
T_j	Junction temperature	---	150	---	°C
T_{stg}	Storage temperature	-55	---	150	°C

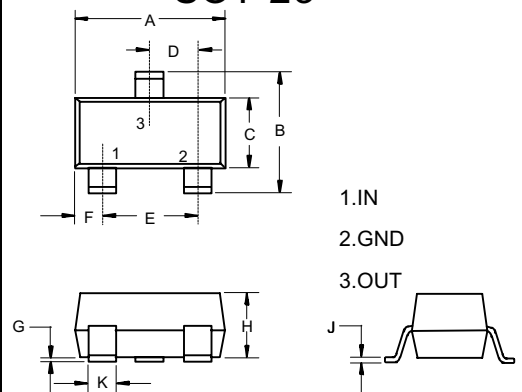
Electrical Characteristics @ 25°C

Symbol	Parameter	Min	Typ	Max	Unit
$V_{I(off)}$	Input voltage ($V_{CC}=5V, I_o=100\mu A$)	---	---	0.5	V
$V_{I(on)}$	Input voltage ($V_o=0.3V, I_o=20mA$)	3.0	---	---	V
$V_{O(on)}$	Output voltage ($I_o=10mA, I_i=0.5mA$)	---	---	0.3	V
I_i	Input current ($V_i=5V$)	---	---	1.8	mA
$I_{O(off)}$	Output current ($V_{CC}=50V, V_i=0$)	---	---	0.5	μA
G_1	DC current gain ($V_o=5V, I_o=10mA$)	30	---	---	
R_i	Input resistance	3.29	4.7	6.11	K Ω
R_2/R_1	Resistance ratio	0.8	1	1.2	
f_T	Transition frequency ($V_{CE}=10V, I_E=5mA, f=100MHz$)	---	250	---	MHz

Equivalent circuit



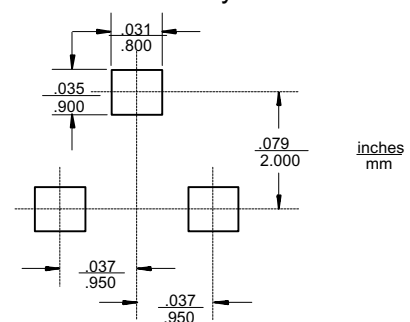
SOT-23



DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.104	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

Suggested Solder Pad Layout



Typical Characteristics

●Electrical characteristic curves

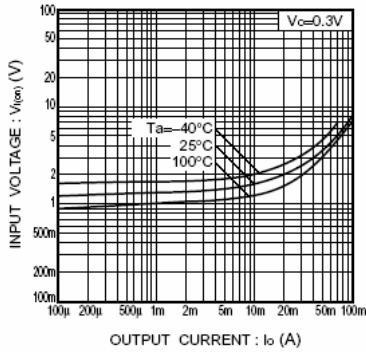


Fig.1 Input voltage vs. output current (ON characteristics)

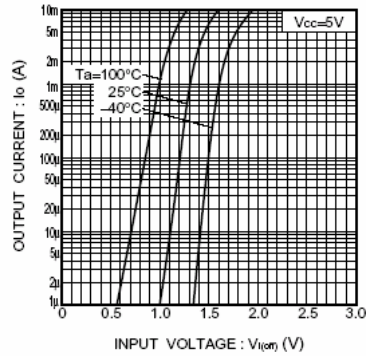


Fig.2 Output current vs. input voltage (OFF characteristics)

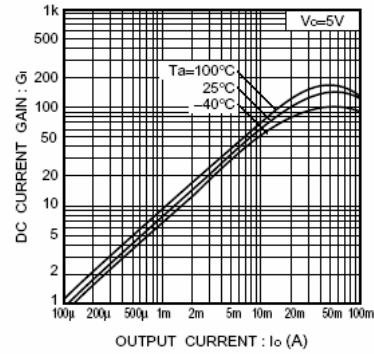


Fig.3 DC current gain vs. output current

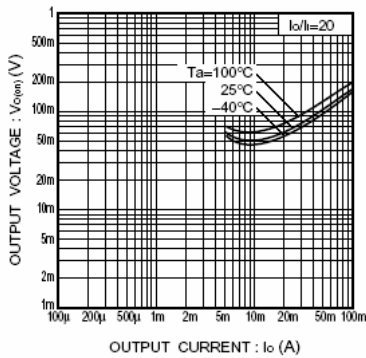


Fig.4 Output voltage vs. output current



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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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