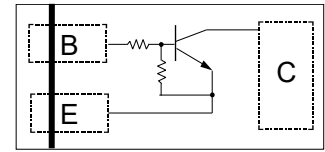
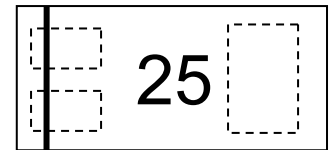


Feature

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).
- The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost completely eliminating parasitic effects.
- Only the on/off conditions need to be set for operation, making the device design easy.



Top view



Marking (Top View)

Applications

- Inverter
- Interface
- Driver

Mechanical Characteristics

- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:260°C
- Device meets MSL 1 requirements
- Pure tin plating: 7 ~ 17 um

Structure

NPN epitaxial planar silicon transistor (Resistor built-in type)

Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Input voltage	$V_{I(off)}$	$V_{CE}=5V, I_C=100\mu A$	0.5	-	-	V
	$V_{I(on)}$	$V_{CE}=0.2V, I_C=5mA$		-	3	V
Output voltage	$V_{O(on)}$	$I_C=10mA, I_B=0.5mA$	-	-	0.3	V
Output current	$I_{O(off)}$	$V_{CB}=50V, I_E=0$	-	-	0.1	μA
DC current gain	G_1	$V_{CE}=5V, I_C=5mA$	56	-	-	-
Input resistance	R_1	-	15.4	22	28.6	K Ω
Resistance ration	R_2/R_1	-	0.8	1	1.2	-
Transition frequency	f_T	$V_{CE}=10V, I_E= 5mA$	-	250	-	MHz

Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	-10 to +40	V
Output current	I_O	100	mA
Power dissipation	P_d	200	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Typical Characteristics

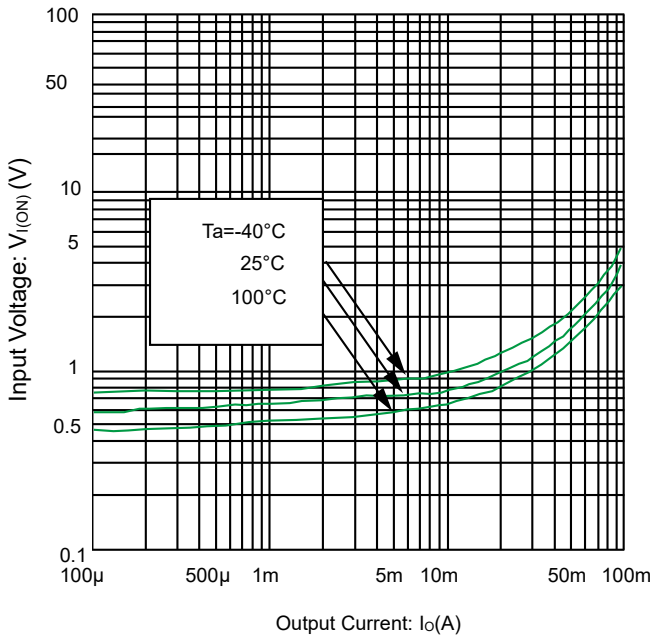


Fig 1.Input Voltage vs. output current
@ $V_C=0.3V$ (ON characteristics)

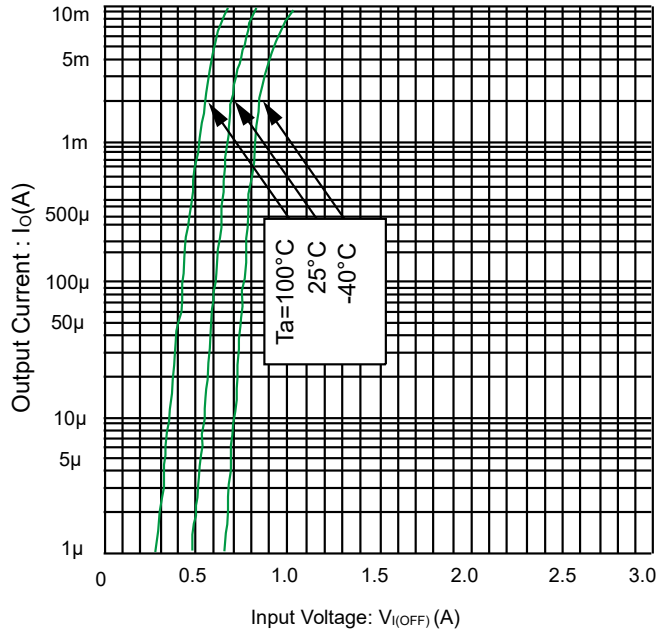
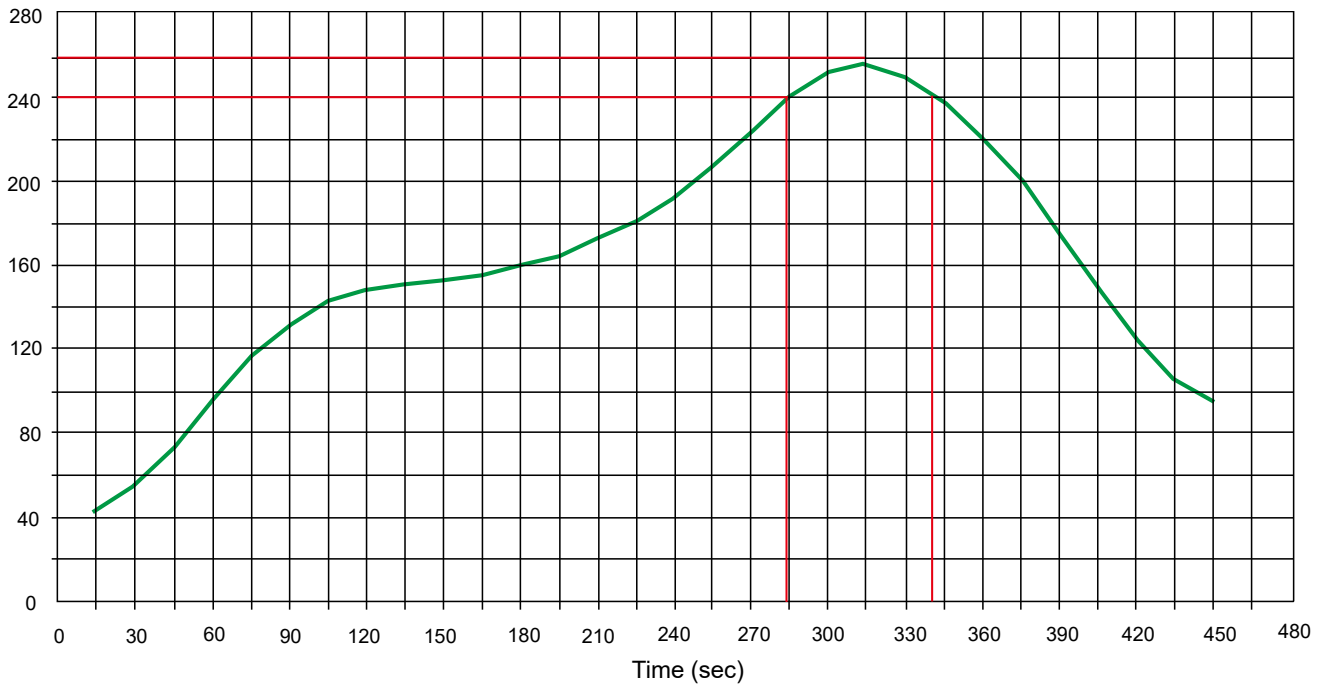


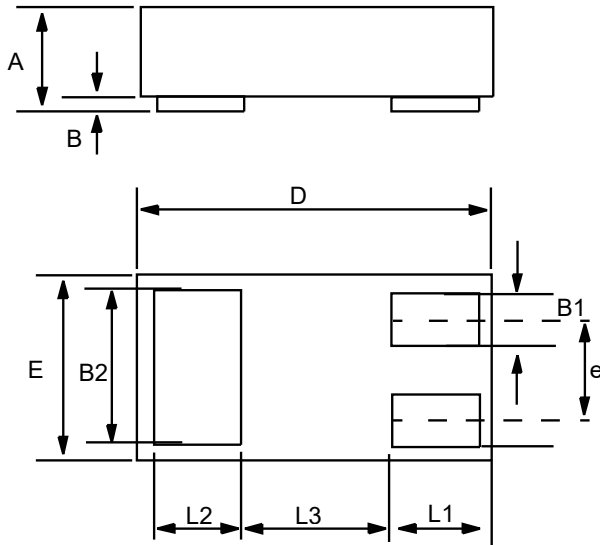
Fig 2.Output current vs. input voltage
@ $V_{CC}=5V$ (OFF characteristics)

Solder Reflow Recommendation

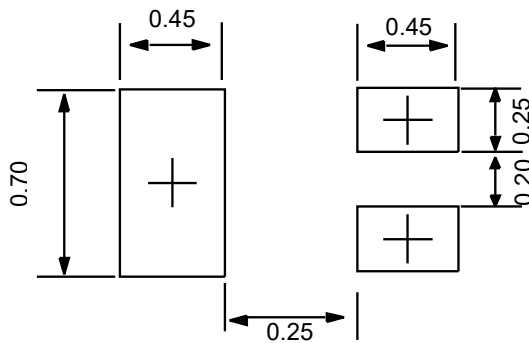
Peak Temp=257°C, Ramp Rate=0.802deg. °C/sec



Product dimension (DFN1006-3L)



Dim	Millimeters		
	MIN	Typ	MAX
A	0.34	0.36	0.50
B	0.0	--	0.05
B1	0.10	0.15	0.20
B2	0.45	0.50	0.55
D	0.85	1	1.15
E	0.45	0.60	0.75
e	--	0.35	--
L1	0.20	0.25	0.30
L2	0.21	0.26	0.31
L3	--	0.39	--




Unit:mm

Ordering information

Device	Package	Shipping
PDTC124EN	DFN1006-3L(Pb-Free)	10000 / Tape & Reel


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