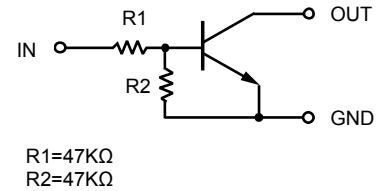


Feature

- 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.


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
- Pin flatness :≤3mil

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	$V_{I(off)}$	$V_{CC}=5V, I_o=100\mu A$	-	-	0.5	V
	$V_{I(on)}$	$V_o=0.3V, I_o=2mA$	3	-	-	V
Output voltage	$V_{O(off)}$	$I_o/I_i=10mA/0.5mA$	-	0.1	0.3	V
Input current	I_i	$V_i=5V$	-	-	0.18	mA
Output current	$I_{O(off)}$	$V_{CC}=50V, V_i=0V$	-	-	0.5	μA
DC current gain	G_1	$V_o=5V, I_o=5mA$	68	-	-	-
Input resistance	R_1	-	32.9	47	61.1	KΩ
Resistance ration	R_2/R_1	-	0.8	1.0	1.2	-

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
	$I_{C(MAX.)}$	100	mA
Power dissipation	P_d	150	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Typical Characteristics

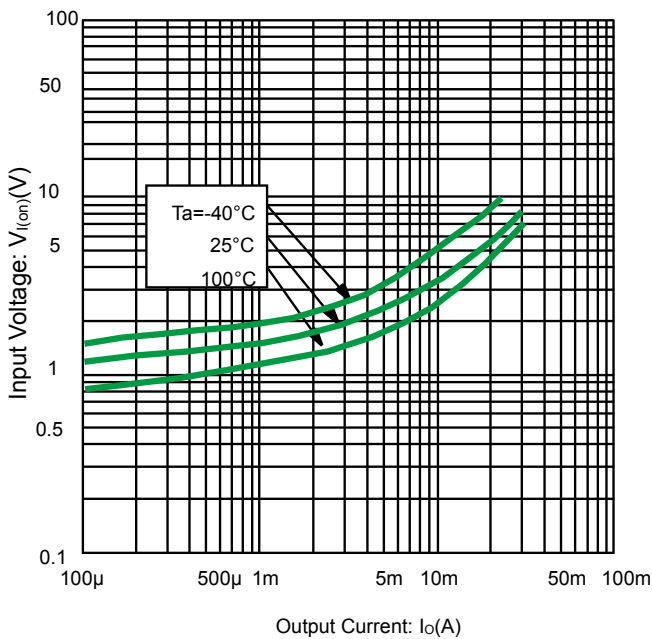


Fig 1. Input Voltage vs. output current
@ $V_c=0.3V$ (ON characteristics)

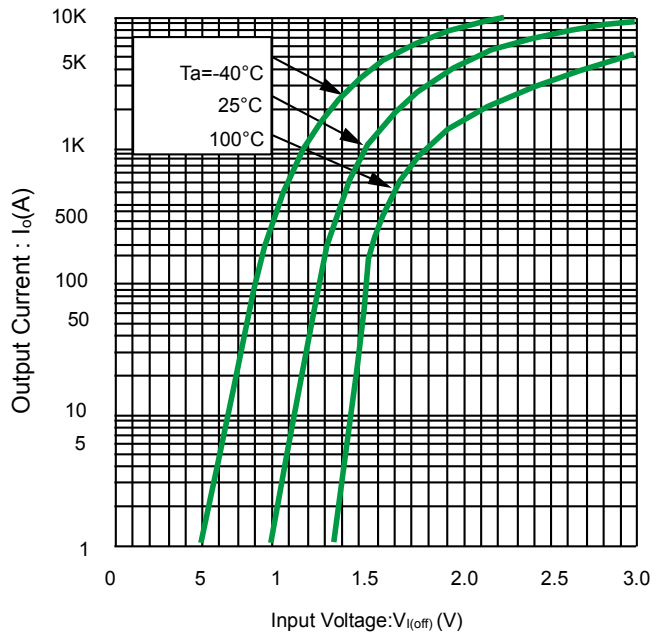
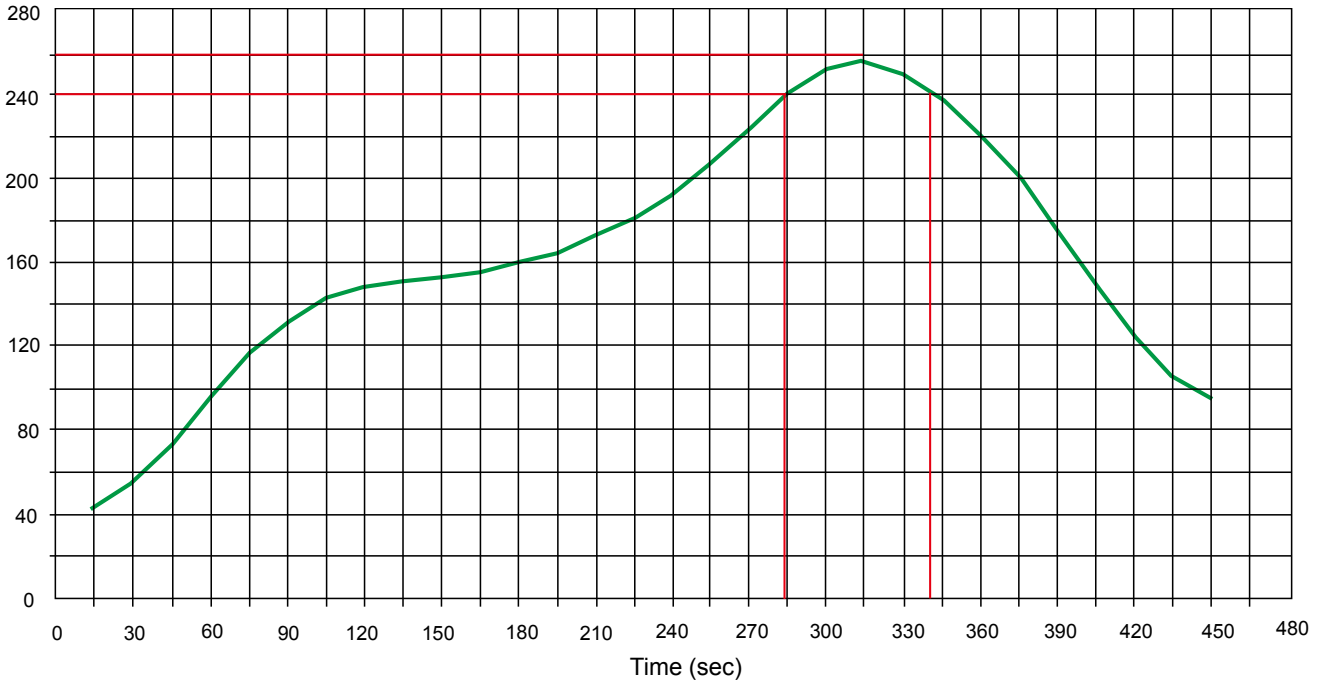


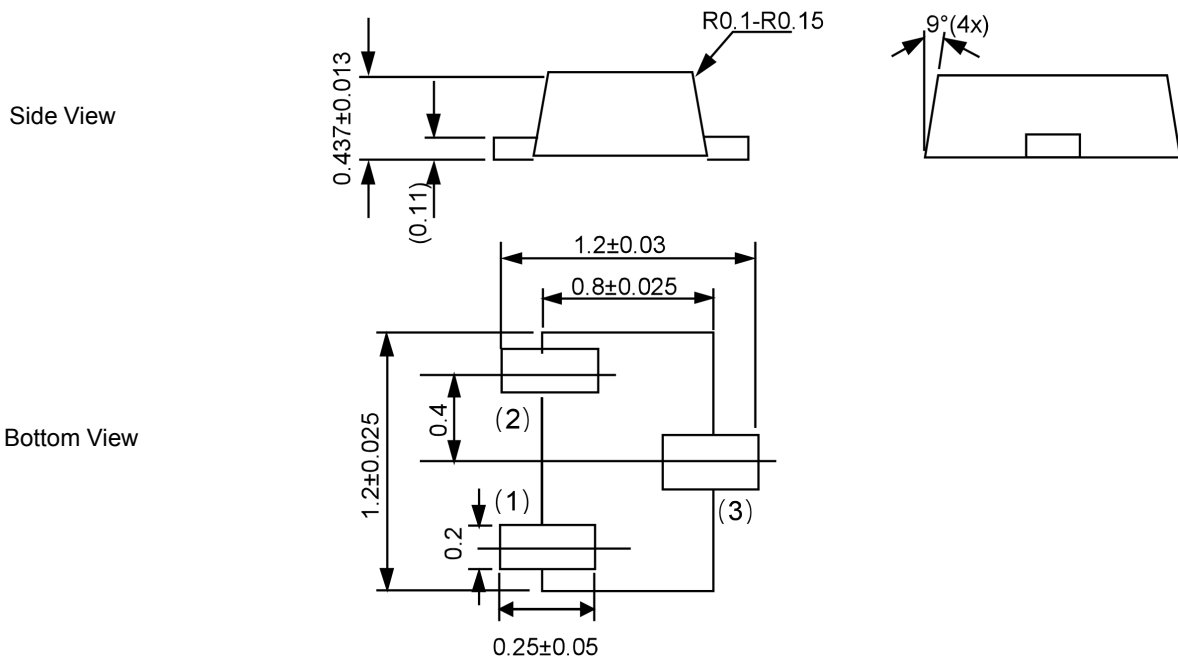
Fig 2. Output current vs. input voltage
@ $V_{CC}=5V$ (OFF characteristics)

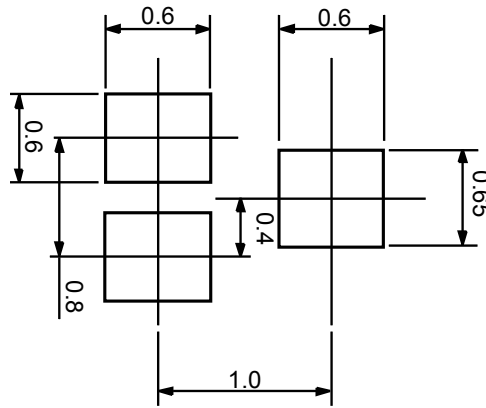
Solder Reflow Recommendation

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



Product dimension (SOT-723)






Unit: mm

Ordering information

Device	Package	Shipping
PDTC144EM	SOT-723 (Pb-Free)	8000 / Tape & Reel


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