

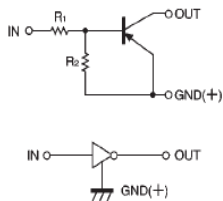
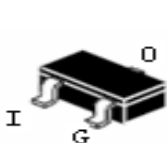
FEATURES

Epitaxial planar die construction.

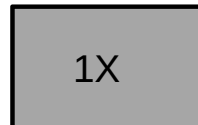
Complementary NPN types available(DTC).

Built-in biasing resistors, $R_1=R_2$

Also available in lead free version.



SOT-323



Type No.	Marking
DTA114EUA	14
DTA143EUA	13
DTA124EUA	15
DTA144EUA	16

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CC}	Supply Voltage	-50	V
V_{IN}	Input Voltage DTA114EUA DTA124EUA DTA143EUA DTA144EUA	-40 to +10 -40 to +10 -30 to +10 -40 to +10	V
I_O	Output Current DTA114EUA DTA124EUA DTA143EUA DTA144EUA	-50 -30 -100 -30	mA
$I_C(\text{Max.})$	Output current ALL	-100	mA
P_D	Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient Air	625	$^{\circ}\text{C}/\text{W}$
T_J, T_{stg}	Operating and Storage and Temperature Range	-55 to +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Input Voltage	$V_{I(off)}$	$V_{CC}=-5V, I_O=-100\mu A$	-0.5	-1.1	-	V
Input Voltage DTA114EUA DTA124EUA DTA143EUA DTA144EUA	$V_{I(on)}$	$V_O=-0.3V, I_O=-10mA$ $V_O=-0.2V, I_O=-5mA$ $V_O=-0.3V, I_O=-20mA$ $V_O=-0.3V, I_O=-2mA$	-	-1.9	-3	
Output Voltage DTA114EUA DTA124EUA DTA143EUA DTA144EUA	$V_{O(on)}$	$I_O/I_I=-10mA/-0.5mA,$		-0.1	-0.3	
Input Current DTA114EUA DTA124EUA DTA143EUA DTA144EUA	I_I	$V_I=-5V$			-0.88 -0.36 -1.8 -0.18	
Output Current	$I_{O(off)}$	$V_{CC}=-50V, V_I=0V$			-0.5	μA
DC Current Gain DTA114EUA DTA124EUA DTA143EUA DTA144EUA	G_I	$V_O=-5V, I_O=-5mA$ $V_O=-5V, I_O=-5mA$ $V_O=-5V, I_O=-10mA$ $V_O=-5V, I_O=-5mA$	30 56 20 68			
Input Resistor DTA114EUA DTA124EUA DTA143EUA DTA144EUA	$R_1(R_2)$		7 15.4 3.29 32.9	10 22 4.7 47	13 28.6 6.11 61.1	$k\Omega$
Resistance Ratio	R_2/R_1		0.8	1	1.2	
Gain-Bandwidth Product	f_T	$V_{CE}=-10V, I_E=5mA,$ $f=100MHz$	-	250	-	MHz

RATING AND CHARACTERISTIC CURVES

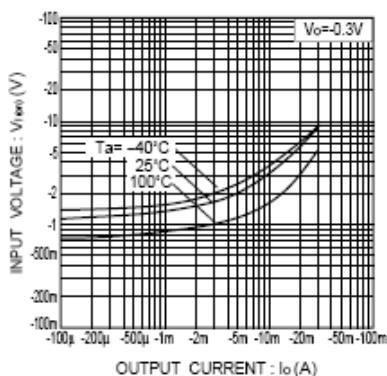


Fig.1 Input voltage vs. output current
(ON characteristics)

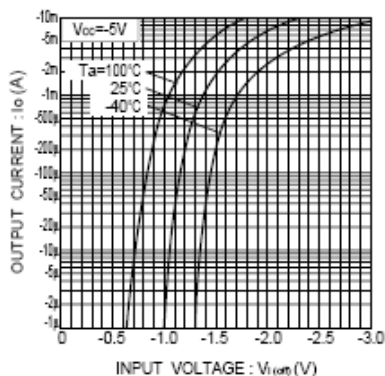


Fig.2 Output current vs. input voltage
(OFF characteristics)

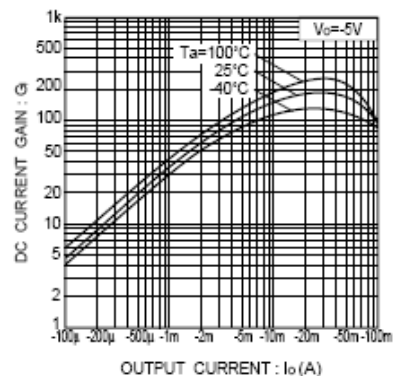


Fig.3 DC current gain vs. output
current

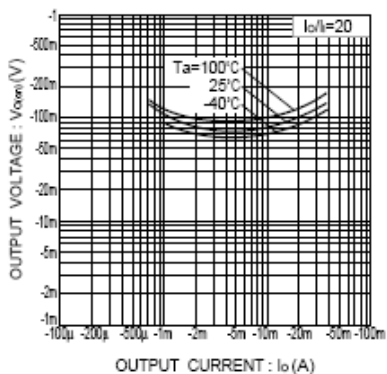
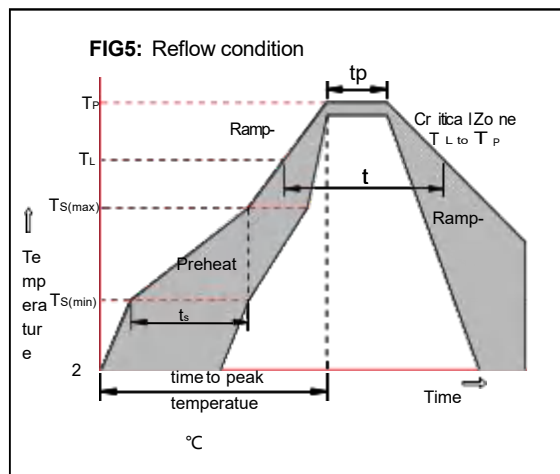


Fig.4 Output voltage vs. output
current

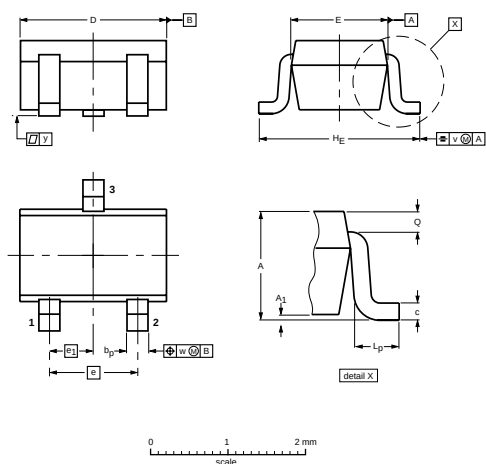
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150 °C
	-Temperature Max($T_{s(max)}$)	+200 °C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3 °C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3 °C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217 °C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5) °C
Time within 5 °C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6 °C/sec. Max
Time 25 °C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260 °C



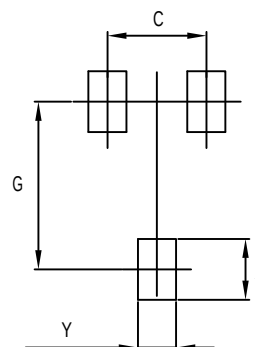
Package Dimensions & Suggested Pad Layout

SOT-323



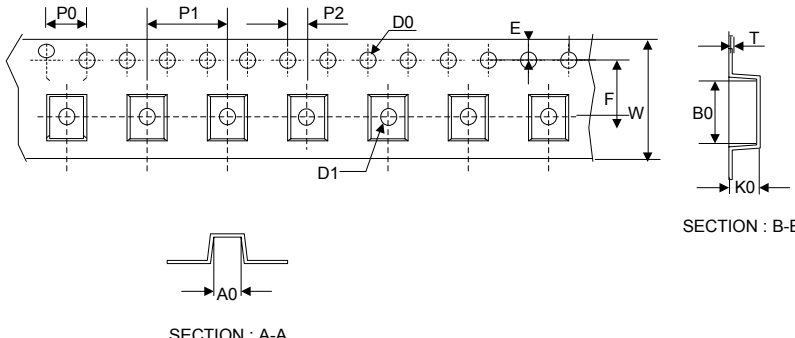
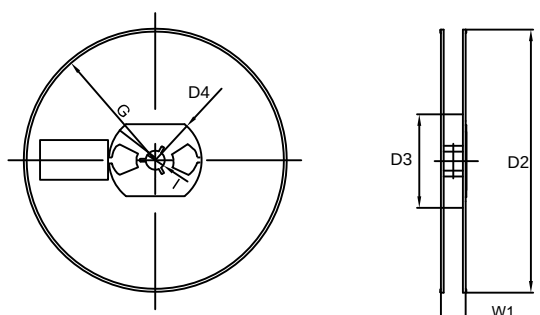
DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2



Dimensions	Value (in mm)
C	1.30
G	2.00
X	0.90
Y	0.65

Tape & reel specification

Tape		Symbol	Dimension (mm)
		P0	4.00±0.20
		P1	4.00±0.20
		P2	2.00±0.20
		D0	1.55±0.20
		D1	1.00±0.20
		E	1.55±0.25
		F	3.60±0.20
		W	8.00±0.20
		A0	2.50±0.20
		B0	2.60±0.20
		K0	1.40±0.20
		T	0.20±0.20
		D2	177.0±5.0
		D3	55Min.
		D4	R24.6±2.0
7" Reel		G	R82.0±2.0
		I	13.0±2.0
		W1	10.20±3.0
		Quantity: 3000PCS	