



Digital Transistors (Built-in Resistors)



Features

- Moisture sensitivity level 1
- General switching and amplification
- Surface mount package ideally suited for automatic Insertion

Application

- Digital applications
- Switching loads

Mechanical data

- Package** SOT-23-3L
- Terminals** Tin plated leads, solderable per J-STD-002 and JESD22-B102

Maximum Ratings ($T_a=25$ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code				64
Collector-base voltage	V_{CC}	V		50
Collector-emitter voltage	V_{IN}	V		-6 to +40
Collector current	I_o	mA		70
Power dissipation	P_D	mW		200
Operation junction temperature	T_J			-55 to +150
Storage temperature	T_{STG}			-55 to +150



Electrical Characteristics (T_a=25 Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Input voltage	V _{I(off)}	V	V _{CC} =5V, I _C =100uA	0.3		
	V _{I(on)}	V	V _O =0.3V, I _C =1mA			1.4
Output voltage	V _{O(on)}	V	I _O / I _I = 5mA/0.25 mA			0.3
Input current	I _I	mA	V _I =5V			0.88
Output current	I _{O(off)}	uA	V _{CC} =50V, V _I =0			0.5
DC current gain	G _I		V _O =5V, I _O =20mA	68		
Input resistance	R ₁	k		7	10	13
Resistance ratio	R ₂ /R ₁			3.7	4.7	5.7
Transition frequency	f _T	MHz	V _O =10V, I _O =5mA, f=100MHz		250	

Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{J-A} ⁽¹⁾	/W	625
Thermal resistance, junction-to-case	R _{J-C} ⁽¹⁾	/W	500

Note:

1 Device mounted on PCB single-sided copper with standard footprint.



Characteristics

Fig 1 Input Voltage (On) Characteristics



Fig 2 Input Current (Off) Characteristic

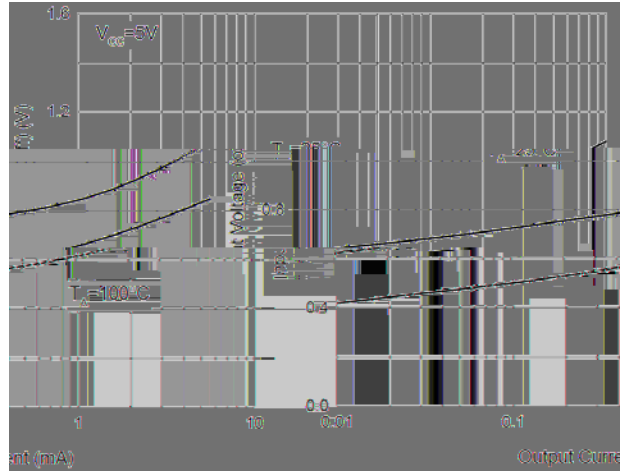


Fig 3 DC Current Gain Characteristics

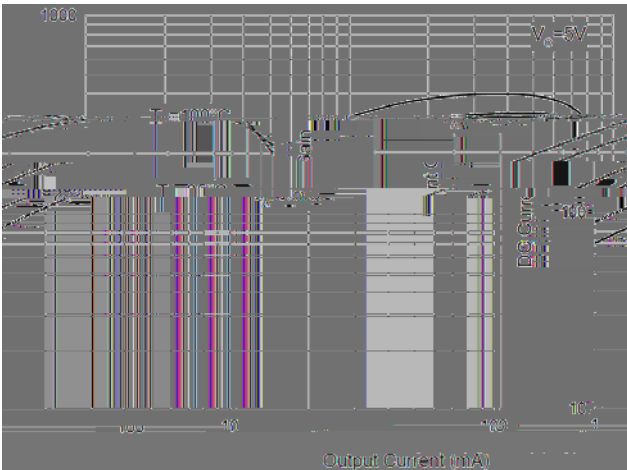


Fig 4 Output Voltage Characteristics

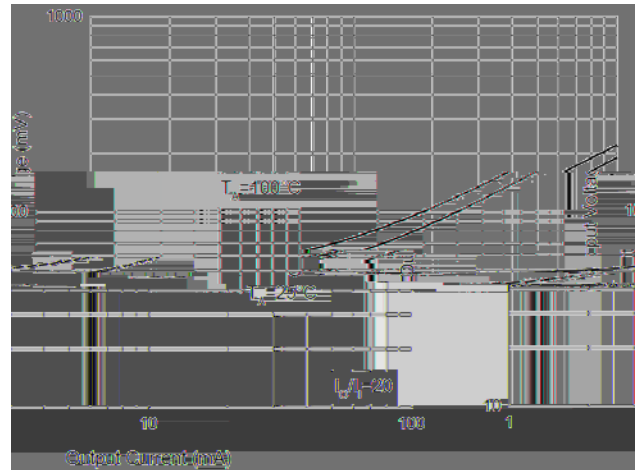
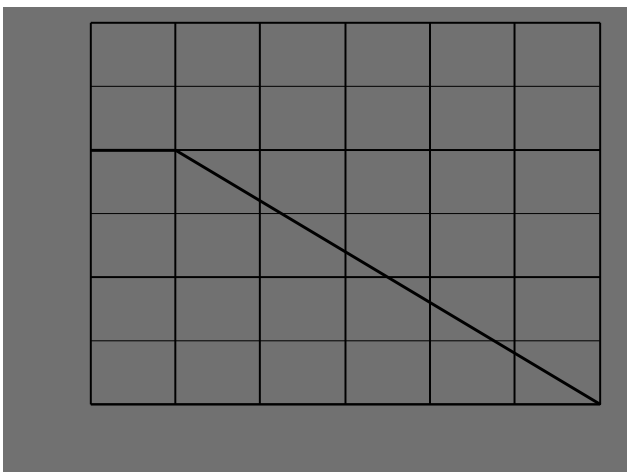


Fig 5 P_D-T_a Curve





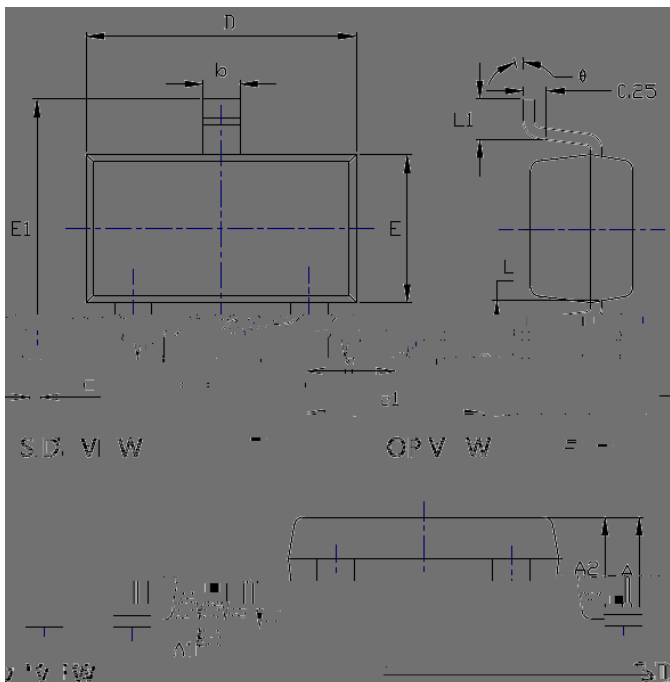
DTC114YKA

RoHS
COMPLIANT

Ordering Information

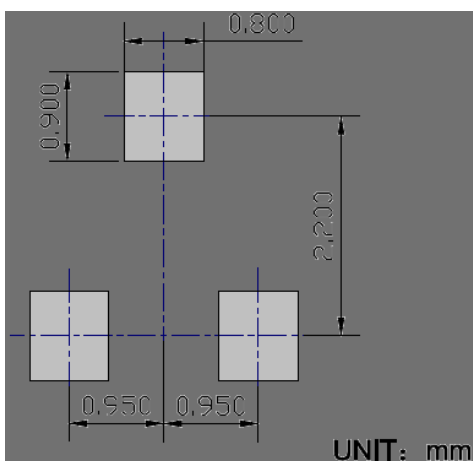
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
DTC114YKA	F2	Approximate 0.014	3000	30000	120000	7" reel

Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		MILLimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.041	0.049	1.050	1.250
A1	0.000	0.008	0.000	0.200
A2	0.041	0.045	1.050	1.150
b	0.067	0.070	1.700	1.775
L	0.116	0.120	2.950	3.050
L1	0.037	0.040	0.950	1.000
theta	0.079	0.085	1.800	2.000
A	0.024	0.025	0.600	0.630
theta	8°	10°	8°	10°

Suggested Pad Layout





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