

FMJ1A

Transistor, digital, PNP, integral diode

Features

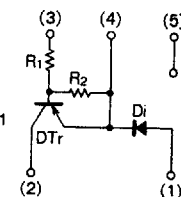
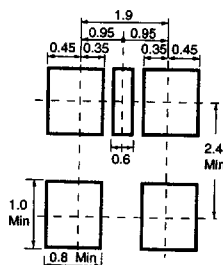
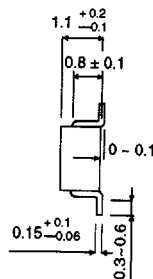
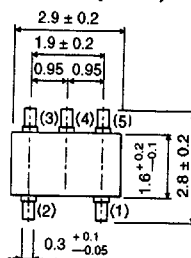
- available in an SMT5 (FMT, SC-74A) package
- package marking: J1
- package includes a digital PNP transistor (DTA144EKA) and a connected diode
- same size as SMT3 (SMT, SC-59), so same placement machine can be used for both
- decreases number of discrete components on circuit board

Applications

- inverter circuit

Dimensions (Units : mm)

FMJ1A (SMT5)



- (1) Diode anode
- (2) DTTr out
- (3) DTTr in
- (4) DTTr GND and diode cathode
- (5) Not used

$R_1 = 47 \text{ k}\Omega$
 $R_2 = 47 \text{ k}\Omega$

Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

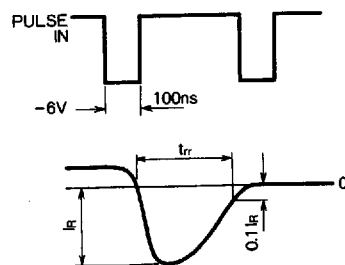
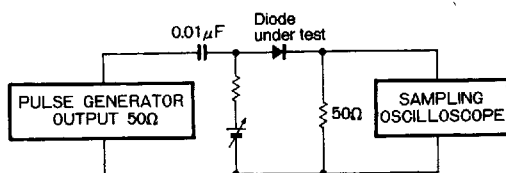
Parameter	Symbol	Limits	Unit	Conditions
Collector dissipation	P_d	300	mW	
Junction temperature	T_j	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$	
Diode between pins 1 and 4				
Spike reverse voltage	V_{RM}	45	V	
DC reverse voltage	V_R	35	V	
Spike reverse voltage	I_{FM}	100	mA	
Average rectifier current	I_O	50	mA	
Surge current	I_{surge}	300	mA	$P_W = 1 \text{ }\mu\text{s}$
Digital transistor between pins 2, 3, and 4				
Power supply voltage	V_{CC}	-50	V	
Input voltage	V_{IN}	$-40 \sim 10$	V	
Collector current	I_O	-30	mA	
	$I_{C(max)}$	-100		

FMJ1A Transistors, composite

Electrical characteristics (unless otherwise noted, $T_a = 25^\circ\text{C}$)

Parameter	Symbol	Min	Typical	Max	Unit	Conditions
Diode between pins 1 and 4						
Forward voltage	V_F			0.9	V	$I_F = 5\text{ mA}$
Reverse current	I_R			0.5	μA	$V_R = 35\text{ V}$
Capacitance between terminals	C_T			3.5	pF	$V_R = 6\text{ V}, f = 1\text{ MHz}$
Reverse recovery time	t_{rr}			4	ns	$V_R = 6\text{ V}, I_F = 5\text{ mA}, R_L = 50\ \Omega$
Digital transistor between pins 2, 3, and 4						
Input voltage	$V_{I(\text{off})}$			-0.5	V	$V_{CC} = -5\text{ V}, I_O = -100\ \mu\text{A}$
	$V_{I(\text{on})}$	-3.0			V	$V_O = -0.3\text{ V}, I_O = -2\text{ mA}$
Output voltage	$V_{O(\text{on})}$			-0.3	V	$I_O/I_I = -10\text{ mA}/-5\text{ mA}$
Input current	I_I			-0.18	mA	$V_I = -5\text{ V}$
Output current	$I_{O(\text{off})}$			-0.5	μA	$V_{CC} = -50\text{ V}, V_I = 0\text{ V}$
DC current gain	G_I	68				$V_O = -5\text{ V}, I_O = -5\text{ mA}$
Input resistance	R_1	32.9	47	61.1	$\text{k}\Omega$	
Resistance ratio	R_2/R_1	0.8	1.0	1.2		

Reverse recovery time test circuit and waveforms



Ordering information

Package	Tape
Code	T148
Basic order quantity	3000
FMJ1A	☆
★ = Standard, ☆ = Semi-standard, * = Special order	