MC931

HIGH-SPEED SWITCHING/SILICON EPITAXIAL TYPE (SERIES TYPE)

DESCRIPTION

The MC931 is a silicon epitaxial double diode employing small epoxy molded package.

It is designed for high-speed switching applications.

Owing to the small terminal capacitance and the short switching time (reverse recovery time), this diode usable not only for high-speed switching applications but also for protection, bias and other circuits.
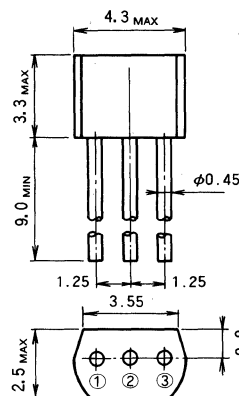
Moreover, this is small in size and double, it is suitable for high-density mounting applications.

FEATURES

● Small terminal capacitance
● High speed switching
● High voltage
● Two devices connected in series
● Good maching characteristics
● Double device and compact format reduce dimensions and enhance high-density mounting.
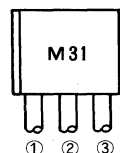
OUTLINE DRAWING   UNIT : mm

TERMINAL CONNECTIONS
① : ANODE 1
② : CATHODE 1 ＋ANODE 2   EIAJ : －
③ : CATHODE 2   JEDEC : －

MARK

M 31

① ② ③

INTERNAL CONNECTIONS

① ② ③

3-pin molded plastic SIL

ABSOLUTE MAXIMUM RATINGS (Ta=25℃)

Symbol	Parameter	Limits	Unit
V_{RM}	Peak reverse voltage	75	V
V_R	Reverse voltage	50	V
I_{FSM}	Forward surge current	4	A
I_{FM}	Peak forward current	300	mA
I_O	Average rectified current	100	mA
P_T	Power dissipation	300	mW
T_j	Junction temperature	＋125	℃
T_{stg}	Storage temperature	－55～＋125	℃
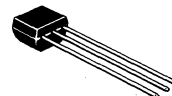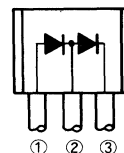
ELECTRICAL CHARACTERISTICS (Ta=25℃)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V_{F1}	Forward voltage	I_F=10mA		0.68	0.9	V
V_{F2}	Forward voltage	I_F=50mA		0.82	1.0	V
V_{F3}	Forward voltage	I_F=100mA		0.92	1.2	V
I_R	Reverse current	V_R=50V			0.1	μA
C_t	Terminal capacitance	V_R=0, f=1MHz		1.2	4.0	pF
t_{rr}	Reverse recovery time	(See measurement circuit)			4.0	ns

HIGH-SPEED SWITCHING/SILICON EPITAXIAL TYPE
(SERIES TYPE)

REVERSE RECOVERY TIME(T_{rr}) MEASUREMENT CIRCUIT

TRIGGER

PULSE GENERATOR ($Z_{OUT}=50\Omega$)

$0.02\mu F$ D.U.T

SAMPLING OSCILLOSCOPE ($Z_{IN}=50\Omega$)

DC POWER SUPPLY

$3k\Omega$

$I_F=10mA.$ $V_R=6V$
$R_L=50\Omega$
RECOVERY TIME FOR $I_{rr}=0.1Ir$
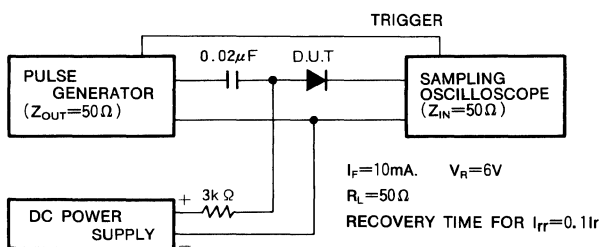
● INPUT VOLTAGE WAVEFORM

V_F
0
V_R
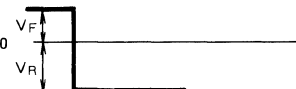
● WAVEFORM OF CURRENT FLOWING TO DIODE

I_F
0
Ir
$0.1Ir$
t_{rr}
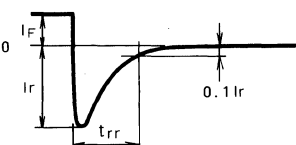
TYPICAL CHARACTERISTICS

FORWARD CURRENT VS FORWARD VOLTAGE

FORWARD CURRENT I_F(mA)

FORWARD VOLTAGE V_F(V)
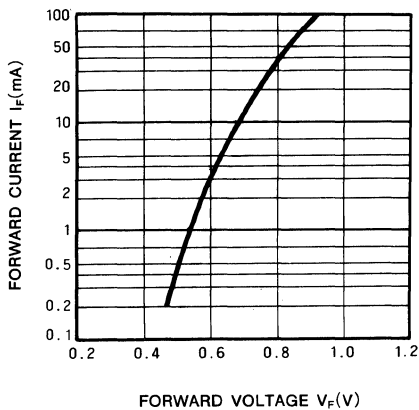
REVERSE CURRENT VS REVERSE VOLTAGE

REVERSE CURRENT I_R(nA)

REVERSE VOLTAGE V_R(V)
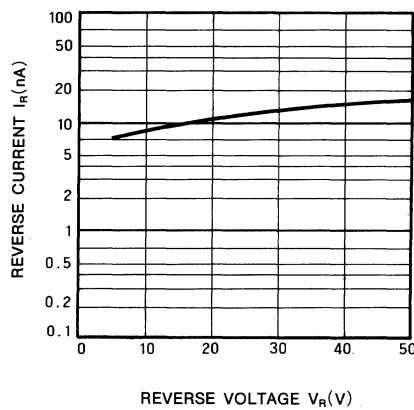
TERMINAL CAPACITANCE VS REVERSE VOLTAGE

TERMINAL CAPACITANCE C_t(pF)

REVERSE VOLTAGE V_R(V)
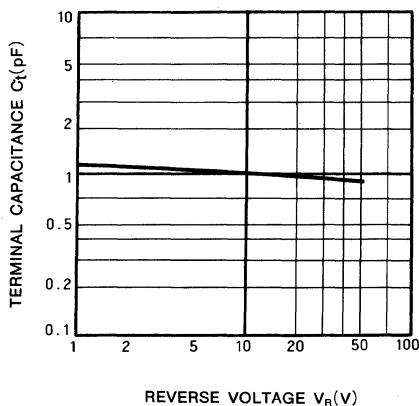
REVERSE RECOVERY TIME VS FORWARD CURRENT

REVERSE RECOVERY TIME t_{rr}(ns)

FORWARD CURRENT I_F(mA)

◆ MITSUBISHI
ELECTRIC