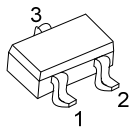
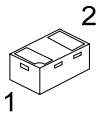
BAT54

DIODE

SCHOTTKY BARRIER DIODE



SOT-23
(JEDEC TO-236)



X1DFN1006-2

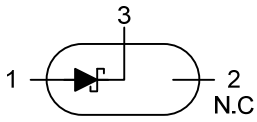
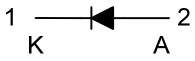
■ DESCRIPTION

Planar Schottky barrier diodes are encapsulated in the SOT-23 small plastic SMD package. Single diodes and dual diodes with different pin configuration are available.

■ FEATURES

* Low forward voltage
* Guard ring protected
* Small plastic SMD package

■ SYMBOL

SOT-23	X1DFN1006-2
	

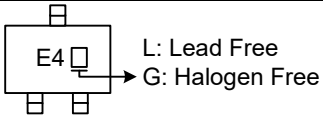
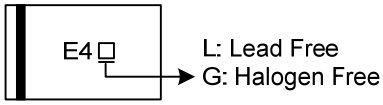
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BAT54L-AE3-R	BAT54G-AE3-R	SOT-23	A	NC	K	Tape Reel
BAT54L-KAA-R	BAT54G-KAA-R	X1DFN1006-2	K	A	-	Tape Reel

Note: Pin Assignment: A: Anode K: Cathode

BAT54G-AE3-R (1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) AE3: SOT-23, KAA: X1DFN1006-2 (3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING

SOT-23	X1DFN1006-2
	

■ ABSOLUTE MAXIMUM RATINGS (T_A = 25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
PER DIODE				
Continuous Reverse Voltage		V_R	30	V
Continuous Forward Current		I_F	200	mA
Repetitive Peak Forward Current (t_P <1s, δ≤0.5)		I_{FRM}	300	mA
Non-repetitive Peak Forward Current (t_P <10ms)		I_{FSM}	600	mA
Junction Temperature		T_J	+125	°C
Storage Temperature		T_{STG}	-60 ~ +150	°C
PER DEVICE				
Power Dissipation (T_A ≤ 25°C)	SOT-23	P_D	230	mW
	X1DFN1006-2		250	mW

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-23	θ_{JA}	540	°C/W
	X1DFN1006-2	θ_{JA}	500	°C/W

■ ELECTRICAL CHARACTERISTICS (T_A = 25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Forward Voltage (See Fig.1)	V_F	I_F = 0.1mA			240	mV
		I_F = 1mA			320	mV
		I_F = 10mA			400	mV
		I_F = 30mA			500	mV
		I_F = 100mA			800	mV
Reverse Current (See Fig.2)	I_R	V_R = 25V			2	μA
Reverse Recovery Time (see Fig.4)	t_{rr}	When switched from I_F =10mA to I_R = 10mA, R_L = 100Ω measured at I_R = 1mA			5	ns
Diode Capacitance (see Fig.3)	C_D	f = 1 MHz, V_R = 1V			10	pF

■ TYPICAL CHARACTERISTICS

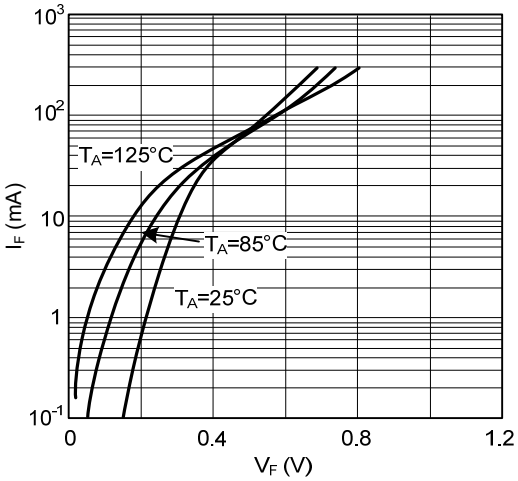


Fig.1 Forward current as a function of forward voltage; typical values.

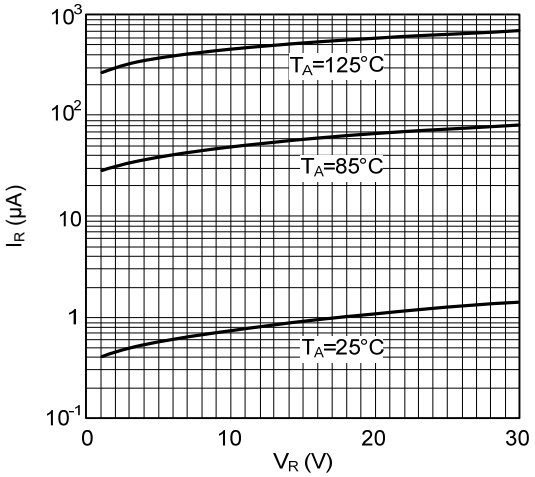


Fig.2 Reverse current as a function of reverse voltage; typical values.

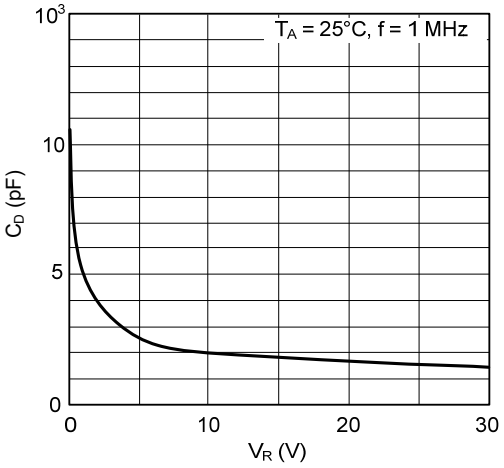


Fig.3 Diode capacitance as a function of reverse voltage; typical values.

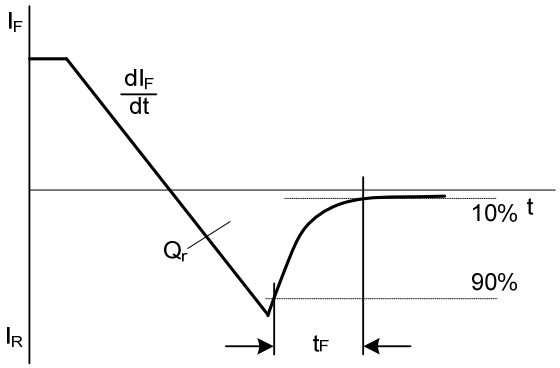


Fig.4 Reverse recovery definitions