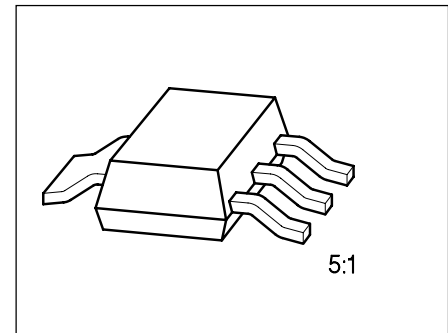


## FRED Diode

## BAX 280

### Preliminary Data

- $V_{RRM}$  1000 V
- $I_{FRMS}$  5.5 A
- $t_{rr}$  55 ns
- Soft recovery characteristics



Type	Ordering Code	Tape and Reel Information	Pin Configuration				Marking	Package
			1	2	3	4		
BAX 280	Q67000-S280	E6327: 1000 pcs/reel	not connected	A	C	A	BAX 280	SOT-223

### Maximum Ratings

Parameter	Symbol	Values	Unit
Mean forward current Soldering point, $T_S = 80\text{ °C}$ , $D = 0.5$	$I_{FAV}$	3.5	A
RMS forward current	$I_{FRMS}$	5.5	
Surge forward current $T_J = 100\text{ °C}$ , 50-Hz sine halfwave, aperiodic	$I_{FSM}$	15	
Repetitive peak forward current $T_J = 100\text{ °C}$ , $t_p \leq 10\text{ }\mu\text{s}$	$I_{FRM}$	35	
$i^2t$ value, $T_J = 100\text{ °C}$ , $t_p = 10\text{ ms}$	$i^2dt$	1.1	A <sup>2</sup> s
Repetitive peak reverse voltage	$V_{RRM}$	1000	V
Surge peak reverse voltage	$V_{RSM}$	1000	
Max. power dissipation, Soldering point $T_S = 80\text{ °C}$ Ambient $T_A = 25\text{ °C}$	$P_{tot}$	10 1.8	W
Operating and storage temperature range	$T_j, T_{stg}$	- 40 ... + 150	°C
Thermal resistance, chip-ambient	$R_{thJA}$	$\leq 70.0$	K/W
Thermal resistance, chip soldering point	$R_{thJS}$	$\leq 7.0$	
DIN humidity category, DIN 40 040	–	E	–
IEC climatic category, DIN IEC 68-1	–	40/150/56	–

**FRED** = Fast Recovery Epitaxial Diode

## Electrical Characteristics

at  $T_j = 25\text{ °C}$ , unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

## Static Characteristics

Forward voltage drop $I_F = 1.5\text{ A}$ $T_j = 25\text{ °C}$ $T_j = 125\text{ °C}$ $T_j = 150\text{ °C}$	$V_F$	– – –	1.3 0.95 0.85	1.7 – –	V
Reverse current $V_R = 1000\text{ V}$ $T_j = 25\text{ °C}$ $T_j = 125\text{ °C}$ $T_j = 150\text{ °C}$	$I_R$	– – –	0.01 0.10 0.15	– – –	mA
Max. forward characteristic $T_j = 125\text{ °C}$	$V_F$	$0.8 + 0.22 \times I_F$			V
Forward power dissipation $T_j = 125\text{ °C}$	$P_F$	$0.8 \times I_{FAV} + 0.22 \times (I_{FRMS})^2$			W

## Dynamic Characteristics

Reverse recovery charge $I_F = 1.5\text{ A}$ , $V_{CC} = 600\text{ V}$ $di_F/dt = -50\text{ A}/\mu\text{s}$ , $T_j = 125\text{ °C}$	$Q_{rr}$	–	0.5	–	$\mu\text{C}$
Peak reverse recovery current $I_F = 1.5\text{ A}$ , $V_{CC} = 600\text{ V}$ $di_F/dt = -50\text{ A}/\mu\text{s}$ , $T_j = 125\text{ °C}$	$I_{RRM}$	–	3.8	–	A
Reverse recovery time $I_F = 1.5\text{ A}$ , $V_{CC} = 600\text{ V}$ $di_F/dt = -50\text{ A}/\mu\text{s}$ , $T_j = 125\text{ °C}$	$t_{rr}$	–	55	–	ns
Storage time $I_F = 1.5\text{ A}$ , $V_{CC} = 600\text{ V}$ $di_F/dt = -50\text{ A}/\mu\text{s}$ , $T_j = 125\text{ °C}$	$t_s$	–	30	–	
Soft factor $I_F = 1.5\text{ A}$ , $V_{CC} = 600\text{ V}$ $di_F/dt = -50\text{ A}/\mu\text{s}$ , $T_j = 125\text{ °C}$	$S$	–	1.0	–	–



