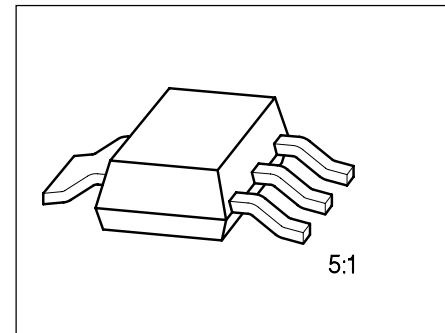


FRED Diode

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 ² 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}	≤ 70.0	K/W
Thermal resistance, chip soldering point	R_{thJS}	≤ 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	–	μC
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	–	–



