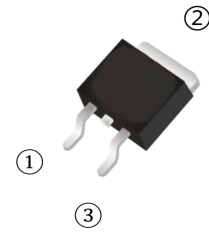




**Ultra-Fast Recovery Diodes**  
**Reverse Voltage-400v**  
**Forward current-10A**

**Features**

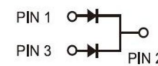
- Ultra-Fast Recovery chip
- Fast reverse recovery time
- Ideal for surface mounted applications
- Low power loss, high efficiency
- Plastic Case Material has UL Flammability



TO-252

**Mechanical Data**

- Package: TO-252
- Terminals: Tin Plated leads, solderable per Mil-STD-750 Method 2026
- Polarity: As marked
- Molding compound meets UL 94 V-0 flammability rating, ROHS-compliant



**Maximum Ratings (Ta=25°C Unless otherwise)**

Type Number	SYMBOL	SF1004DS	Unit
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	400	V
Maximum RMS Voltage	$V_{RMS}$	280	V
Maximum DC Blocking Voltage	$V_{DC}$	400	V
Maximum Average Forward Rectified Current at TL = 100 °C	$I_{O(AV)}$	10.0	A
Peak Forward Surge Current 8.3ms Single half-sine-wave superimposed on rated load(JEDEC Method) on rated	IFSM	170.0	A
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, Tj=25°C		340.0	A
Current squared time @1ms≤t≤8.3ms Tj=25°C, Rating of per diode	$i^2t$	70.55	A <sup>2</sup> S
Maximum Forward Voltage at 10.0A DC	$V_{FM}$	1.3	V
Maximum Reverse Current TA = 25 °C	IR	5	uA
at Rated DC Blocking Voltage TA = 125 °C		500	uA
Typical Thermal Resistance Between junction to board	$R_{QJB}$	50	°C/W
	$R_{QJC}$	2.0	
Operating Junction Temperature Range	$T_J$	-55to+150	°C
Storage Temperature Range	$T_{STG}$	-55to+150	°C



FIG. 1 MAXIMUM AVERAGE FORWARD CURRENT DERATING

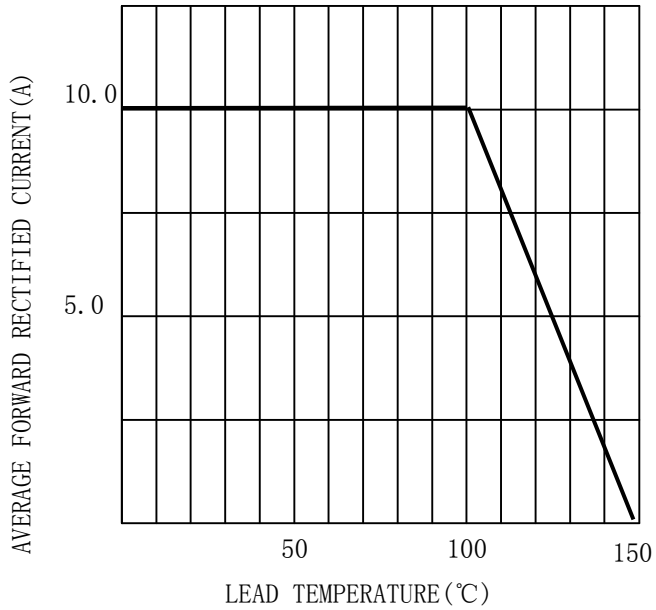


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

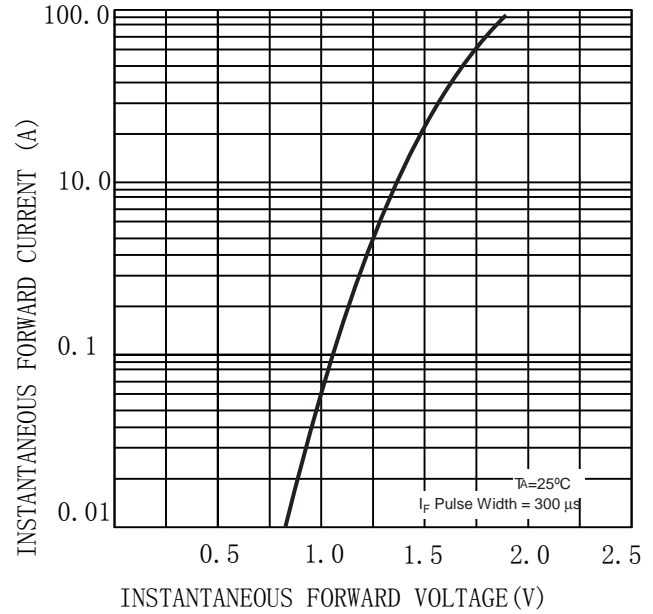


FIG. 3 MAXIMUM NON-REPEITIVE SURGE CURRENT

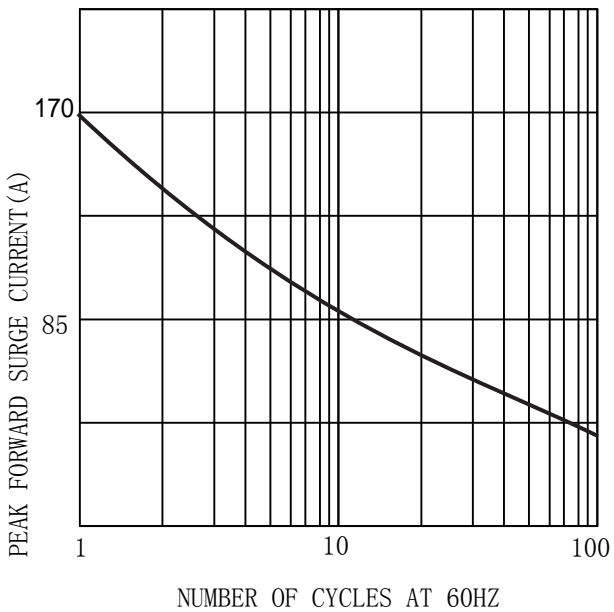
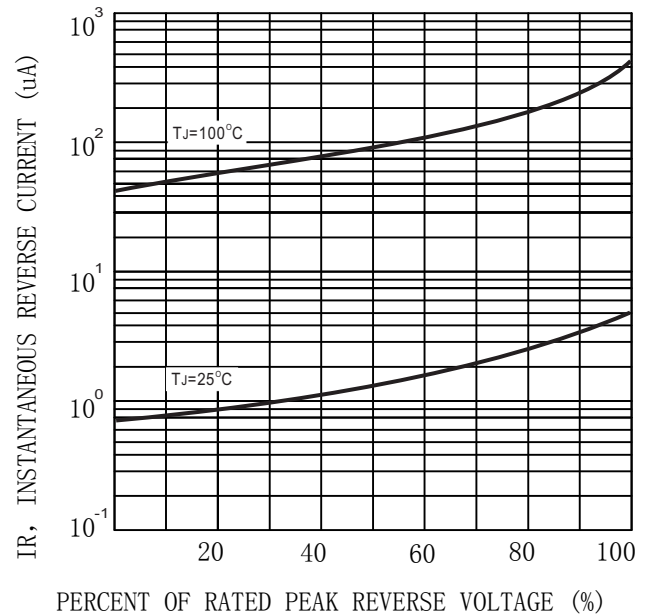


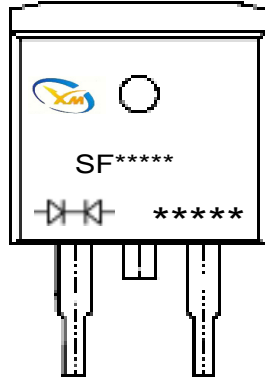
FIG. 4 TYPICAL REVERSE CHARACTERISTICS (per element)







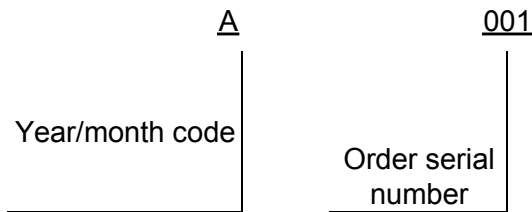
**MARKING INFORMATION**

TO-252/DS



-  = Polar line
-  = Logo
- \*\*\*\*\* = Date Code Marking
- SF\*\*\*\*\* = Marking Code

Date Code Marking



Example: January 2023 order number is 001, period A001

January 2025 Order number is 001, period  $\overset{\cdot}{A}$ 001

Period code year distinction					
2023/2024	2025/2026	2027/2028	2029/2030	2031/2032	remark
no	first	second	tertius	fourth	Dot above corresponding character

eriod code month code mapping table												
month	1	2	3	4	5	6	7	8	9	10	11	12
Single year (Example 2023)	A	B	C	D	E	F	G	H	I	J	K	L
Biennial (example 2024)	M	N	O	P	Q	R	S	T	U	V	W	X



Package Outline Dimensions millimeters

TO-252DS					
DIM	INCHES		MM		NOTE
	min	max	min	max	
A	0.25	0.27	6.3	6.9	
B	0.23	0.25	5.8	6.4	
C	0.08	0.10	2.1	2.5	
D	0.35	0.43	9.0	11.0	
E	0.21	0.22	5.3	5.5	
a	0.08	0.10	2.1	2.5	
b	0.06	0.06	1.4	1.6	
c	0.02	0.03	0.6	0.8	
d	0.02	0.02	0.4	0.6	
e	0.02	0.02	0.4	0.6	

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