

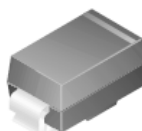


ES1F - ES1J

Fast Rectifiers

Features

- For surface mount applications.
- Glass passivated junction.
- Low profile package.
- Easy pick and place.
- Built-in strain relief.
- Superfast recovery times for high efficiency.



SMA(DO-214AC)
Color Band Denotes Cathode

Absolute Maximum Ratings * T_a = 25°C unless otherwise noted

Symbol	Parameter	Value				Units
		ES1F	ES1G	ES1H	ES1J	
V _{RRM}	Maximum Repetitive Reverse Voltage	300	400	500	600	V
I _{F(AV)}	Average Rectified Forward Current	1.0				A
I _{FSM}	Non-repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine-Wave (JEDEC method)	30				A
T _J	Junction Temperature	150				°C
T _{STG}	Storage Temperature Range	-55 to 150				°C
P _D	Power Dissipation	1.47				W

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Thermal Characteristics

Symbol	Parameter	Value	Units
R _{θJA}	Thermal Resistance, Junction to Ambient *	85	°C/W
R _{θJL}	Thermal Resistance, Junction to Lead *	35	°C/W

* P, C, B mounted on 0.2" x 0.2" (5 x 5 mm) copper Pad Area.

Electrical Characteristics T_C = 25°C unless otherwise noted

Symbol	Parameter	Value		Units
V _F	Maximum Forward Voltage @ I _F = 1.0 A	1.3	1.7	V
T _{rr}	Maximum Reverse Recovery Time I _F = 0.5 A, I _R = 1.0 A, I _{RR} = 0.25 A	35		ns
I _R	Maximum Reverse Current @ rated V _R T_A = 25°C T_A = 100°C	5.0 100		uA
C _j	Typical Junction Capacitance V _R = 4.0 V, f = 1.0 MHz	10.0	8.0	pF

Typical Performance Characteristics

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

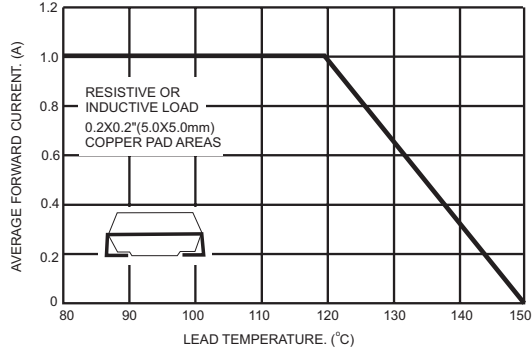


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

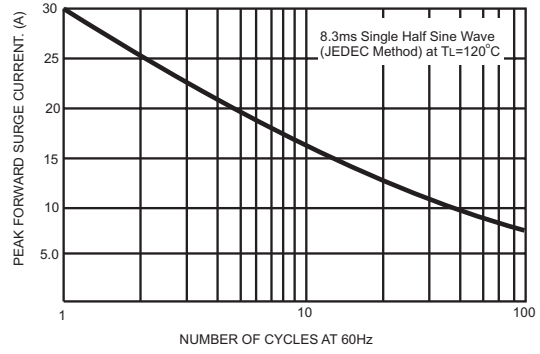


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

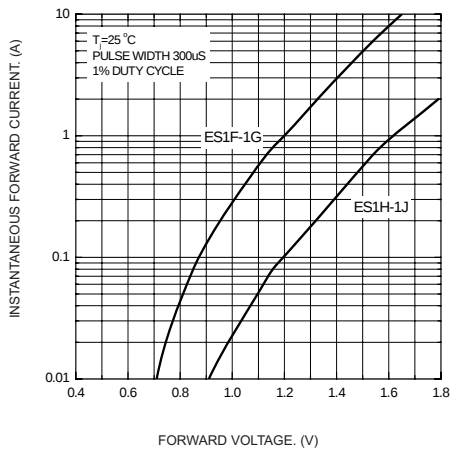


FIG.4- TYPICAL REVERSE CHARACTERISTICS

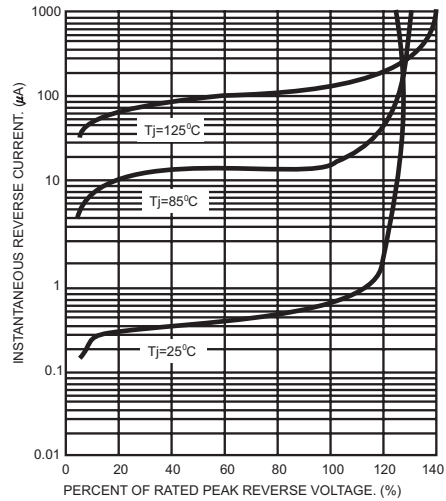
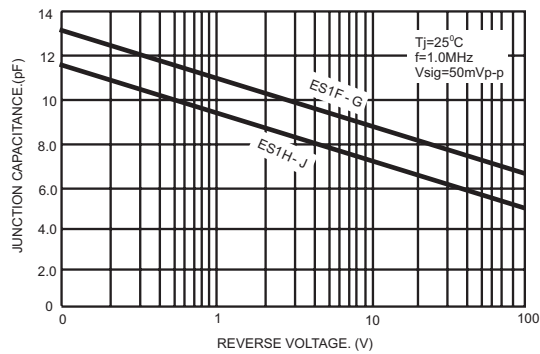
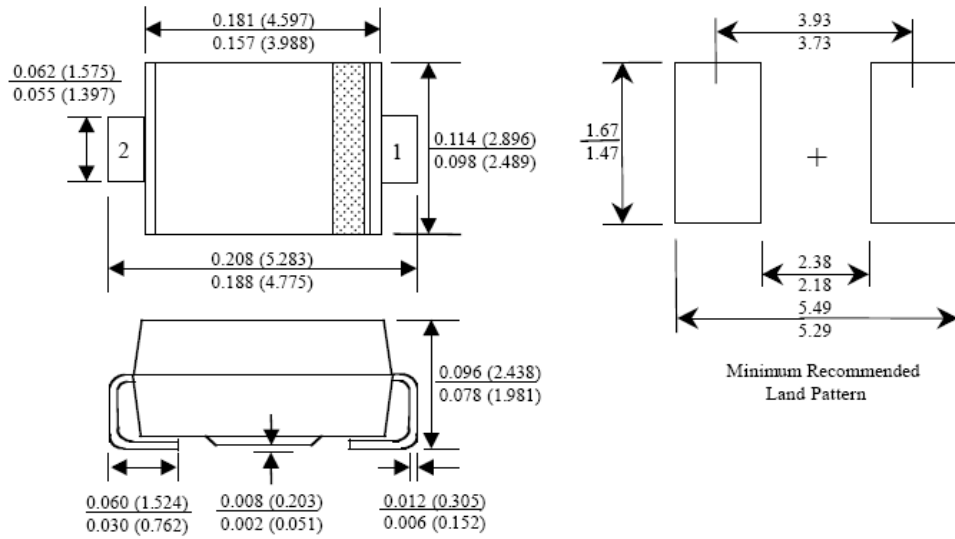


FIG.5- TYPICAL JUNCTION CAPACITANCE



Package Dimensions

SMA / DO - 214AC



Dimensions in Millimeters



TRADEMARKS

The following are registered and unregistered trademarks and service marks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACE ^x ®	Green FPS [™]	Power247 [®]	SuperSOT [™] -8
Build it Now [™]	Green FPS [™] e-Series [™]	POWEREDGE [®]	SyncFET [™]
CorePLUS [™]	GTO [™]	Power-SPM [™]	The Power Franchise [®]
CROSSVOLT [™]	i-Lo [™]	PowerTrench [®]	the power franchise
CTL [™]	IntelliMAX [™]	Programmable Active Droop [™]	TinyBoost [™]
Current Transfer Logic [™]	ISOPLANAR [™]	QFET [®]	TinyBuck [™]
EcoSPARK [®]	MegaBuck [™]	QS [™]	TinyLogic [®]
F [®]	MICROCOUPLER [™]	QT Optoelectronics [™]	TINYOPTO [™]
Fairchild [®]	MicroFET [™]	Quiet Series [™]	TinyPower [™]
Fairchild Semiconductor [®]	MicroPak [™]	RapidConfigure [™]	TinyPWM [™]
FACT Quiet Series [™]	Motion-SPM [™]	SMART START [™]	TinyWire [™]
FACT [®]	OPTOLOGIC [®]	SPM [®]	μSerDes [™]
FAST [®]	OPTOPLANAR [®]	STEALTH [™]	UHC [®]
FastvCore [™]	 ®	SuperFET [™]	UniFET [™]
FPS [™]	PDP-SPM [™]	SuperSOT [™] -3	VCX [™]
FRFET [®]	Power220 [®]	SuperSOT [™] -6	
Global Power Resource SM			

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION, OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS. THESE SPECIFICATIONS DO NOT EXPAND THE TERMS OF FAIRCHILD'S WORLDWIDE TERMS AND CONDITIONS, SPECIFICALLY THE WARRANTY THEREIN, WHICH COVERS THESE PRODUCTS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.