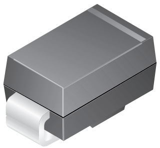
FAIRCHILD
SEMICONDUCTOR ™

ES1A - ES1D

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

1.0 Ampere Superfast Rectifiers

Absolute Maximum Ratings*

T_A = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
$I_{F(AV)}$	Average Rectified Current @ T_A = 120°C	1.0	A
I_{FSM}	Non-repetitive Peak Forward Surge Current 8.3 ms single half-sine-wave Superimposed on rated load (JEDEC method)	30	A
P_D	Total Device Dissipation Derate above 25°C	1.47 11.76	W mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient**	85	°C/W
$R_{\theta JL}$	Thermal Resistance, Junction to Lead**	35	°C/W
T_{stg}	Storage Temperature Range	-50 to +150	°C
T_J	Operating Junction Temperature	-50 to +150	°C

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

**Device mounted on FR-4 PCB 0.013 mm.

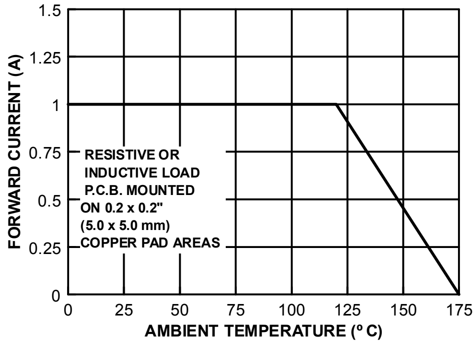
Electrical Characteristics

T_A = 25°C unless otherwise noted

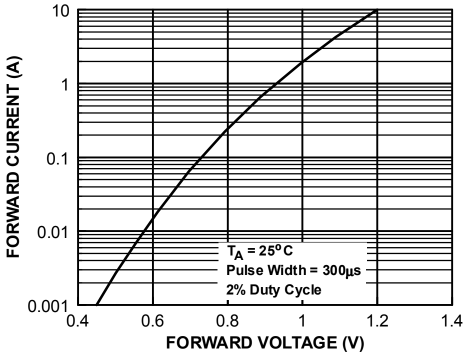
Symbol	Parameter	Device				Units
		1A	1B	1C	1D	
V_{RRM}	Maximum Repetitive Reverse Voltage	50	100	150	200	V
V_{RMS}	Maximum RMS Voltage	35	70	105	140	V
V_R	DC Reverse Voltage (Rated V_R)	50	100	150	200	V
I_{RM}	Maximum Instantaneous Reverse Current @ rated V_R T_A = 25°C T_A = 100°C	5.0 100				µA µA
t_{rr}	Maximum Reverse Recovery Time I_F = 0.5 A, I_R = 1.0 A, I_{RR} = 0.25 A	15				ns
V_{FM}	Maximum Instantaneous Forward Voltage @ 1.0 A	0.92				V
C	Typical Junction Capacitance V_R = 4.0 V, f = 1.0 MHz	7.0				pF

Typical Characteristics

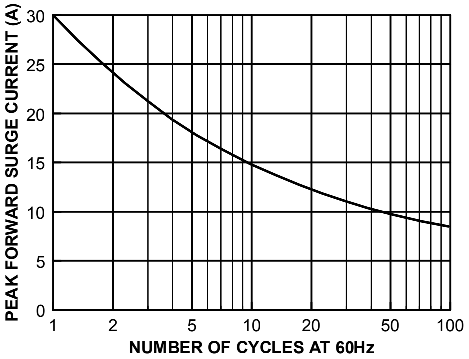
Forward Current Derating Curve



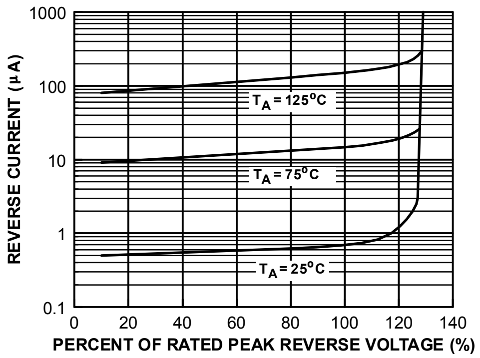
Forward Characteristics



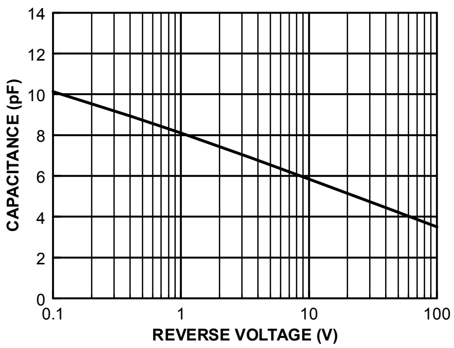
Non-Repetitive Surge Current

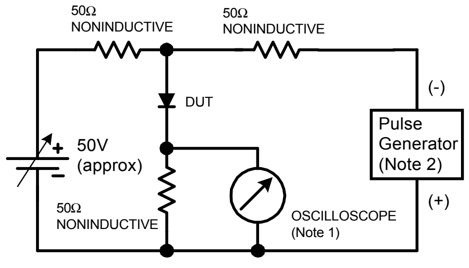


Reverse Characteristics

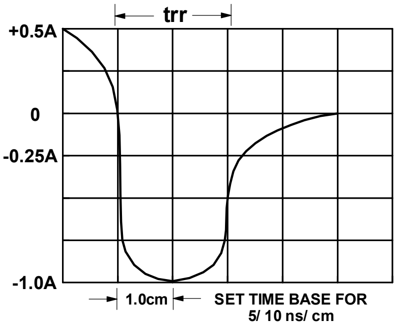


Junction Capacitance





NOTES:
1. Rise time = 7.0 ns max; Input impedance = 1.0 megaohm 22 pf.
2. Rise time = 10 ns max; Source impedance = 50 ohms.

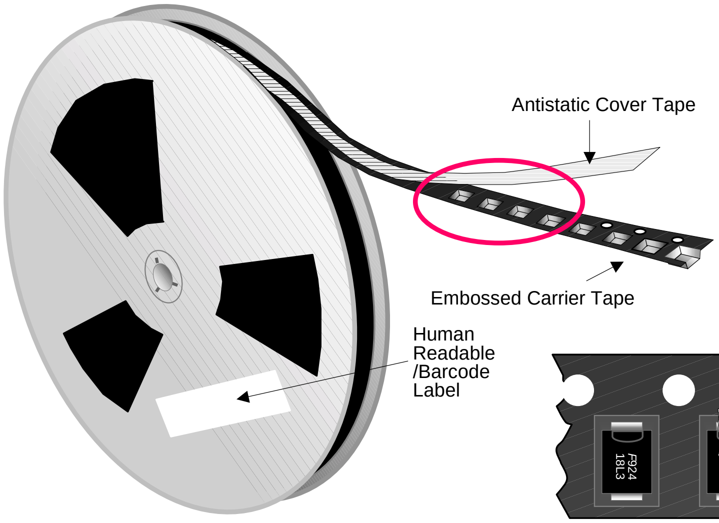


Reverse Recovery Time Characterstic and Test Circuit Diagram

DO-214AC(SMA) Tape and Reel Data

FAIRCHILD SEMICONDUCTOR™

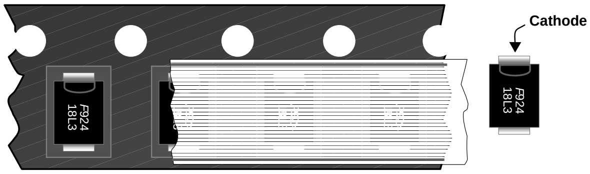
DO-214AC(SMA) Packaging Configuration: Figure 1.0



Packaging Description:

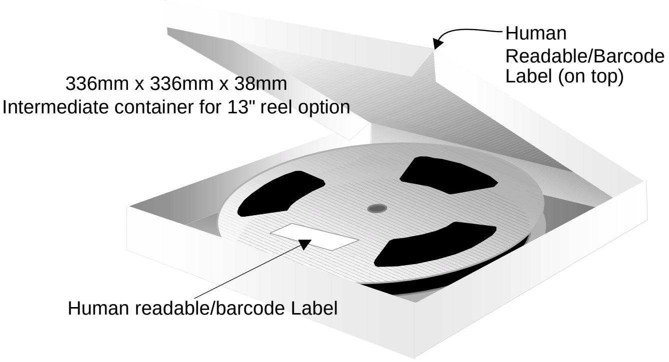
DO-214AC(SMA) parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. Alternate carrier tape is made of anti-static plastic. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 7,500 units per 13" or 330cm diameter reel. The reel comes in plastic or carton which is made of polystyrene plastic (anti-static coated) and thick white paper respectively. Further information is described in the Packaging Information table.

These full reels are individually labeled and placed inside a bleach box (illustrated in figure 1.0) made of recyclable carton paper with a Fairchild logo printing. One box contains two reels maximum. Certain number of these boxes are placed inside shipping box which comes in different sizes depending on the number of parts shipped.



DO-214AC(SMA) unit orientation

DO-214AC(SMA) Packaging Information		
Packaging Option	Under package code **P5**	Under package code **MA**
Packaging type	TNR	TNR
Qty per Reel/Tube/Bag	7,500	5,000
Reel Size (inch diameter)	13	13
Box Dimension (mm)	336X336X38	340X350X340
Max qty per Box	15,000	10,000
Weight per unit (gm)	0.064	0.064
Weight per Reel (kg)	0.860	0.750
Note/Comments	Human readable label	Barcode label



Human Readable Label sample

CAUTION: This container provides protection for static sensitive devices. Handle devices with caution upon removal.

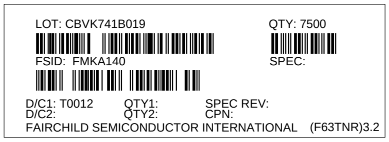
FAIRCHILD SEMICONDUCTOR™

MADE IN ONE OR MORE OF THE FOLLOWING COUNTRIES: PHILIPPINES (MACTAN, EXPORT PROCESSING ZONE), MALAYSIA, CHINA, S. KOREA, TAIWAN, THAILAND, SINGAPORE AND JAPAN.

ANTI-STATIC

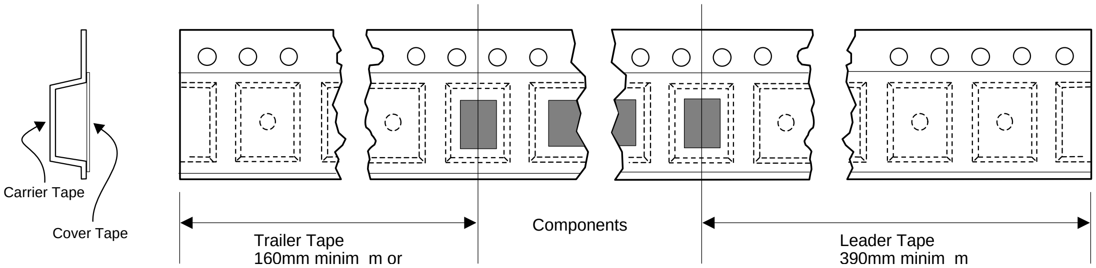
I.D. FMKA140 **Qty** 7500
D/C T0012 **Lot** CBVK741B019

F63TNR Label sample



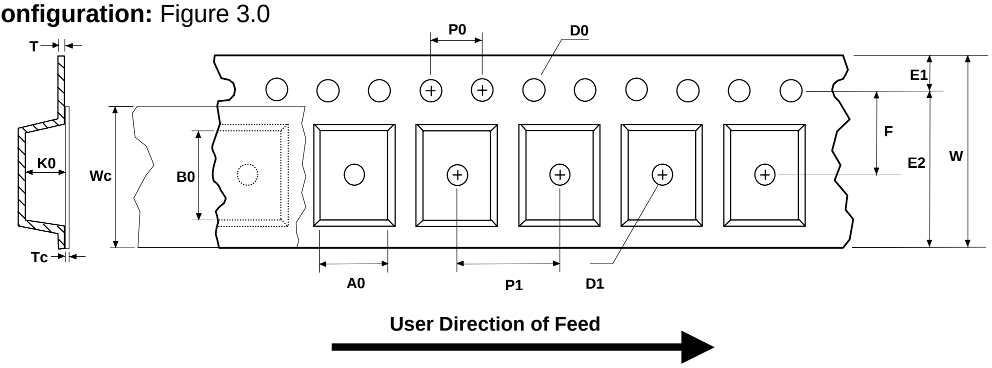
LOT: CBVK741B019 QTY: 7500
FSID: FMKA140 SPEC:
D/C1: T0012 QTY1: SPEC REV:
D/C2: QTY2: CPN:
FAIRCHILD SEMICONDUCTOR INTERNATIONAL (F63TNR)3.2

DO-214AC(SMA) Tape Leader and Trailer Configuration: Figure 2.0



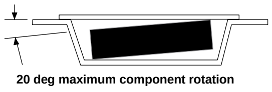
DO-214AC(SMA) Tape and Reel Data, continued

DO-214AC(SMA) Embossed Carrier Tape Configuration: Figure 3.0

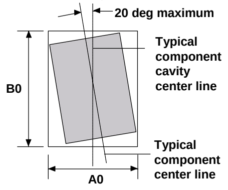


Dimensions are in millimeter														
Pkg type	**A0**	**B0**	**W**	**D0**	**D1**	**E1**	**E2**	**F**	**P1**	**P0**	**K0**	**T**	**Wc**	**Tc**
DO-214AC(SMA) (12mm)	2.72 +/-0.10	5.25 +/-0.10	12.0 +/-0.3	1.55 +/-0.05	1.125 +/-0.125	1.75 +/-0.10	10.25 min	5.5 +/-0.05	4.0 +/-0.1	4.0 +/-0.1	2.45 +/-0.10	0.23 +/-0.10	9.3 +/-0.025	0.06 +/-0.02

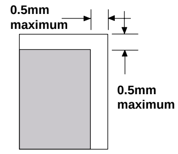
Notes: A0, B0, and K0 dimensions are determined with respect to the EIA/Jedec RS-481 rotational and lateral movement requirements (see sketches A, B, and C).



Sketch A (Side or Front Sectional View)
Component Rotation

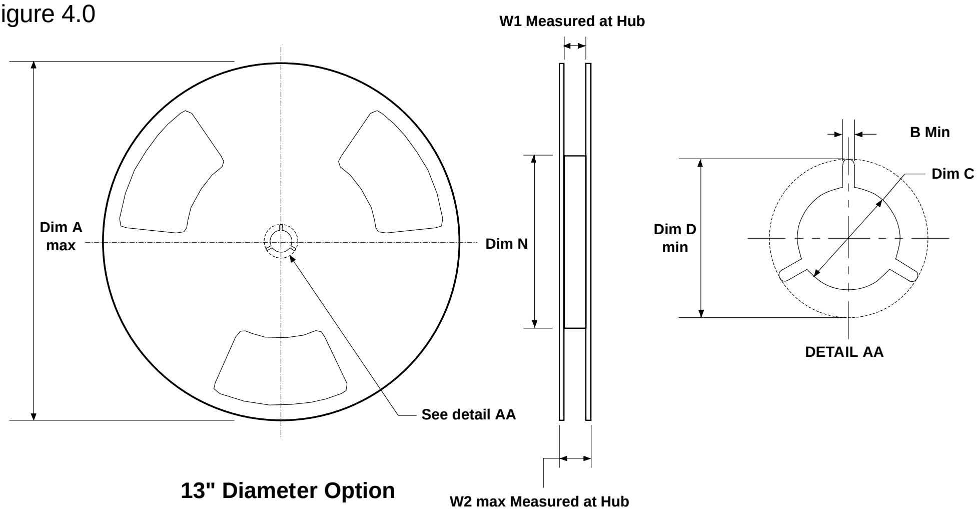


Sketch B (Top View)
Component Rotation



Sketch C (Top View)
Component lateral movement

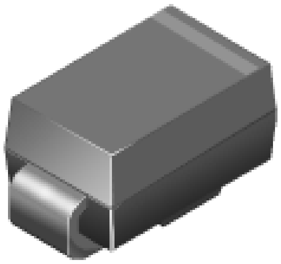
DO-214AC(SMA) Reel Configuration: Figure 4.0

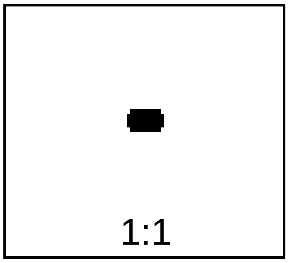


Dimensions are in inches and millimeters								
Tape Size	**Reel Option**	**Dim A**	**Dim B**	**Dim C**	**Dim D**	**Dim N**	**Dim W1**	**Dim W2**
12mm	13" Dia	13.0 330	0.059 1.5	512 +0.020/-0.008 13 +0.5/-0.2	0.795 20.2	1.97 50 min	0.331 +0.059/-0.000 8.4 +1.5/0	0.567 14.4

DO-214AC(SMA) Package Dimensions

DO-214AC(SMA) (FS PKG Code P5)

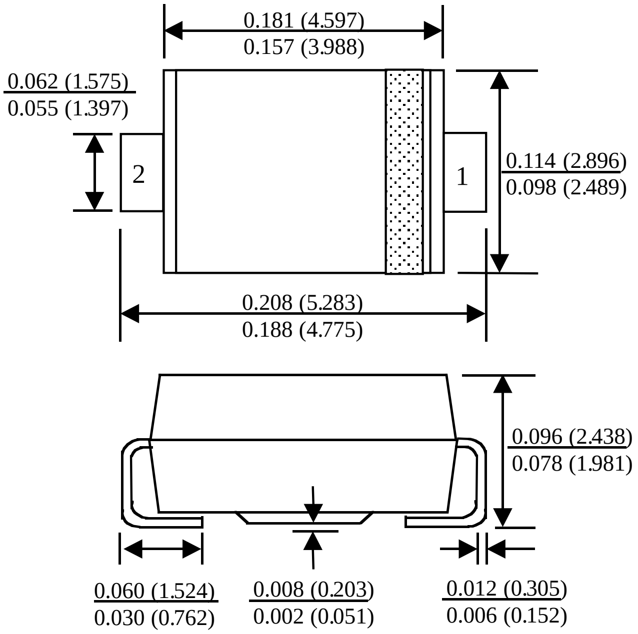


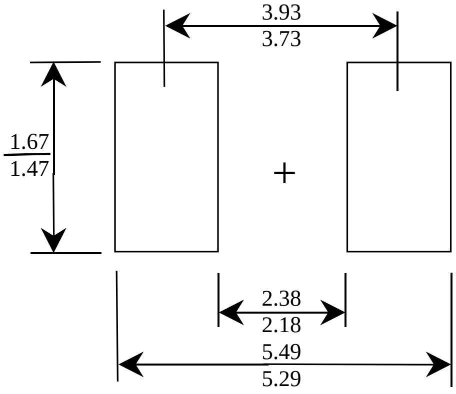


Scale 1:1 on letter size paper

Dimensions shown below are in:
inches [millimeters]

Part Weight per unit (gram): 0.064





Minimum Recommended
Land Pattern

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