

ANTREX Electronics

Electronic Components Sourcing Information

Product Reference Information

Part Number:	30HFUR-400
Manufacturer:	Vishay General Semiconductor - Diodes Division
Package:	DO-203AB, DO-5, Stud
Availability:	Please confirm with sales

Product Page:

<https://antrexco.com/product/details/vishay-general-semiconductor-diodes-division/30hfur-400.html>



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Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

INTERNATIONAL RECTIFIER


30HFU... SERIES

SUPER FAST RECTIFIER DIODE 30 Amp 60ns

Major ratings and characteristics

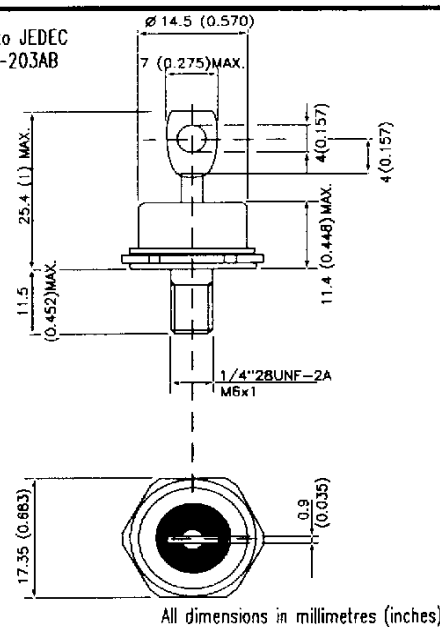
	30HFU	Units
$I_{F(AVG)}$	30	A
T_c	91	°C
I_{RMS}	47	A
I_{FSM} @ 10ms	475	A
I_{FSM} @ 8.3ms	500	A
V_{RRM}	100 to 600	V
T_J	-40 to 125	°C

Description and Features

- Very low reverse recovery time
- Reduced switching losses
- Soft recovery characteristics
- High surge current capability
- No voltage derating up to 150°C
- Stud cathode and stud anode versions
- Designed for switching applications:
Free wheeling diode in converters and
control circuits
Rectifier in S.M.P.S.



Conforms to JEDEC
Outline DO-203AB
(DO-5)



ELECTRICAL SPECIFICATIONS
Forward Conduction

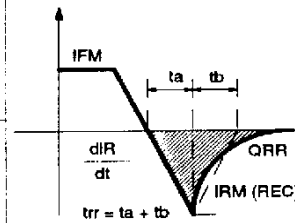
Parameters	Value	Units	Conditions
$I_{F(AV)}$ Maximum average forward current	30	A	180° conduction, half sine cond @ Case temperature = 91°C
	33	A	180° conduction, rect cond @ Case temperature = 91°C
I_{RMS} Maximum RMS current	47	A	
I_{FSM} Maximum peak, one-cycle non-repetitive forward current Initial $T_J = T_J \text{ max.}$	475	A	$t = 10\text{ms}$ No voltage reapplied
	500	A	$t = 8.3\text{ms}$
	400	A	$t = 10\text{ms}$ 100% V_{RRM} reapplied
	420	A	$t = 8.3\text{ms}$
P_t Maximum P_t for fusing Initial $T_J = T_J \text{ max.}$	1130	A ² s	$t = 10\text{ms}$ No voltage reapplied
	1030	A ² s	$t = 8.3\text{ms}$
	800	A ² s	$t = 10\text{ms}$ 100% V_{RRM} reapplied
	730	A ² s	$t = 8.3\text{ms}$
$P\sqrt{t}$ Maximum $P\sqrt{t}$ for fusing	11300	A ² √s	$t = 0$ to 10ms, no voltage reapplied
$V_{F(10)}$ Maximum value of threshold voltage	1.08	V	$T_J = 125^\circ\text{C}$
r_l Maximum value of forward slope resistance	6.33	mΩ	$T_J = 125^\circ\text{C}$
V_{FM} Maximum forward voltage drop	1.45	V	$I_{FM} = 30\text{ Apk}$ $T_J = 25^\circ\text{C}$
	1.25	V	$I_{FM} = 30\text{ Apk}$ $T_J = 175^\circ\text{C}$

Thermal and Mechanical Specifications

T_J Junction temperature range	-40 to 125	°C	
T_{stg} Storage temperature range	-40 to 150	°C	
R_{thJC} Maximum thermal resistance junction to case	0.60	K/W	DC operation per junction
R_{thCS} Maximum thermal resistance, case to heatsink	0.25	K/W	Mounting surface, smooth and greased
T Mounting torque, base to heatsink $\pm 10\%$	2.5	Nm	A mounting compound is recommended and the torque should be rechecked after a period of about 3 hours to allow for the spread of the compound
w_l Approximate weight	25	g	

Recovery Characteristics

Parameters	Typ.	Max.	Units	Conditions
t_{rr} Recovery time	60	80	ns	$T_J = 25^\circ\text{C}$ $I_F = 1\text{A}$, $dI_F/dt = -100\text{ A}/\mu\text{s}$, $V_R = -30\text{V}$
Q_{rr} Recovered charge	200	250	nC	$T_J = 25^\circ\text{C}$ $I_F = 1\text{A}$, $dI_F/dt = -100\text{ A}/\mu\text{s}$, $V_R = -30\text{V}$


Voltage ratings ($T_J = T_J \text{ max.}$)

Type number	V_{RRM} , maximum repetitive peak reverse voltage	V_{RSM} , maximum non-repetitive peak reverse voltage	$I_{RRM} \text{ Max}$ @ 100°C	$I_{RRM} \text{ Max}$ @ 150°C	I_{RRM} Typ. @ 25°C
30HFU(R)-100	100	110	2.5	10	35
30HFU(R)-200	200	220	2.5	10	35
30HFU(R)-300	300	330	2.5	10	35
30HFU(R)-400	400	440	2.5	10	35
30HFU(R)-500	500	550	2.5	15	35
30HFU(R)-600	600	660	2.5	15	35

ΔR Conduction (per junction)

(The following table shows the increment of thermal resistance R_{thJ-C} when devices operate at different conduction angles than DC.)

Conduction angle	Sinusoidal conduction	Rectangular conduction	Units	Conditions
180°	0.09	0.08	K/W	
120°	0.12	0.14	K/W	
90°	0.16	0.18	K/W	
60°	0.23	0.24	K/W	
30°	0.35	0.36	K/W	

Fig.1 - Maximum Forward Energy Loss Per Pulse Characteristics

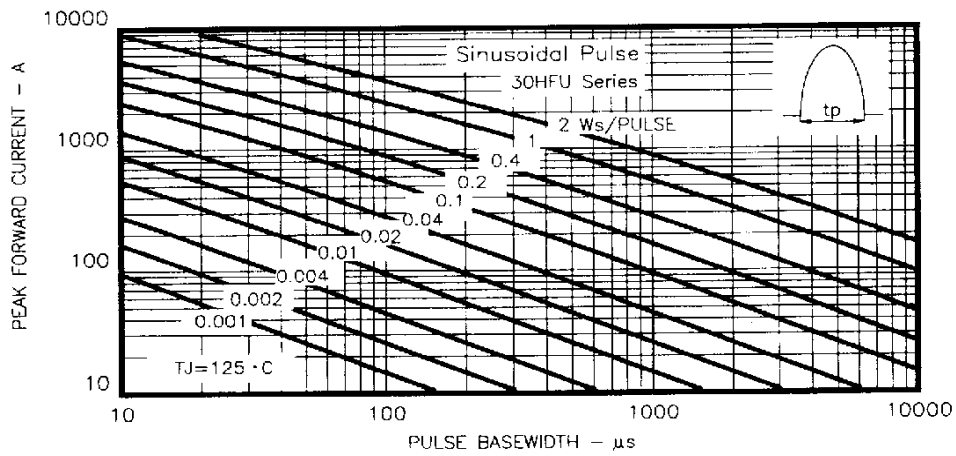
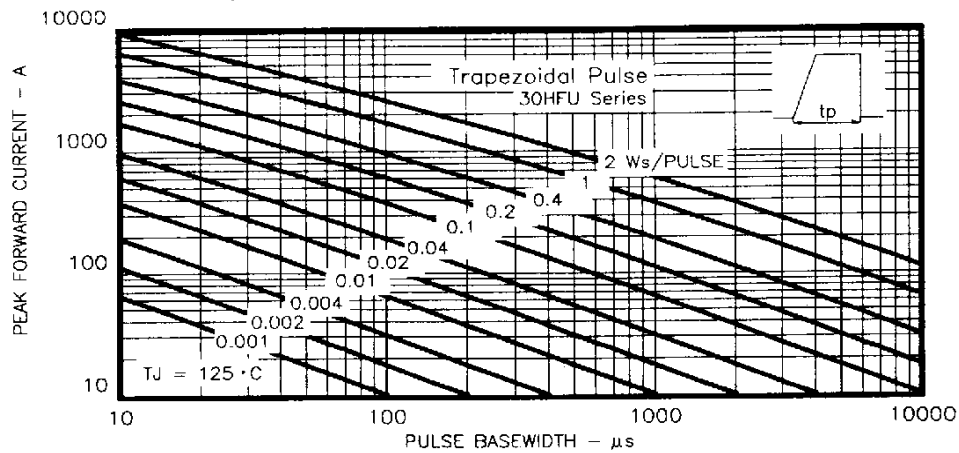
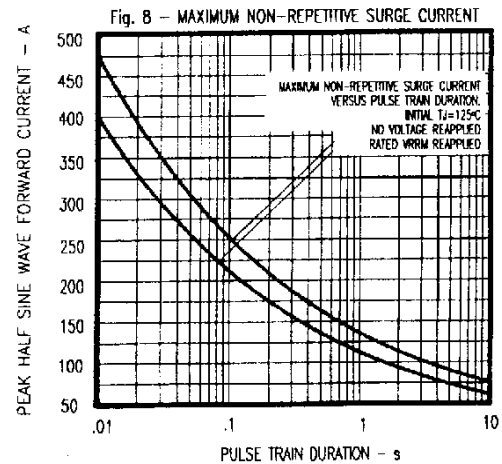
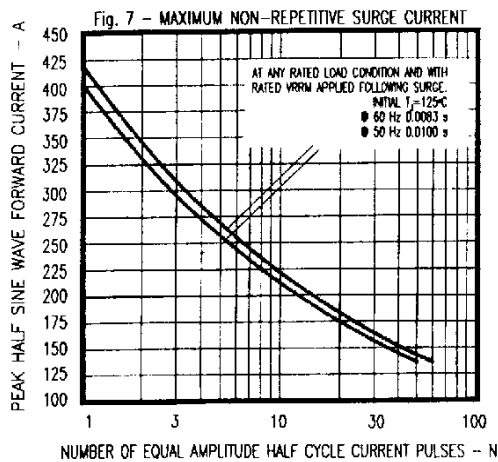
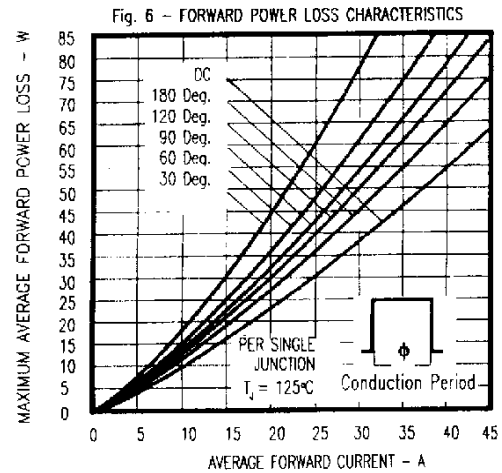
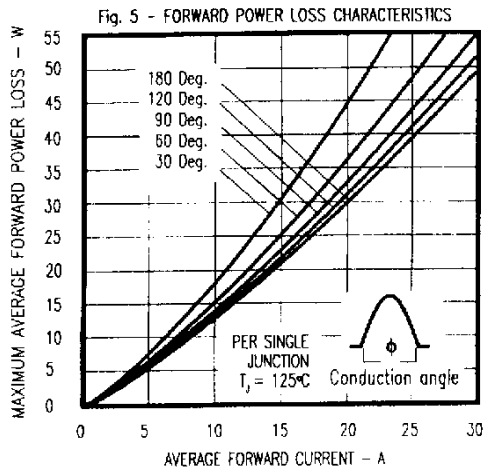
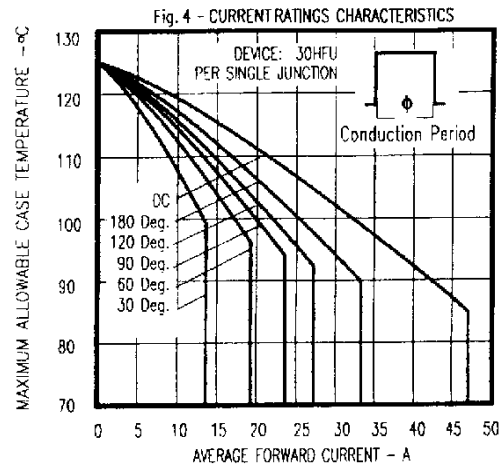
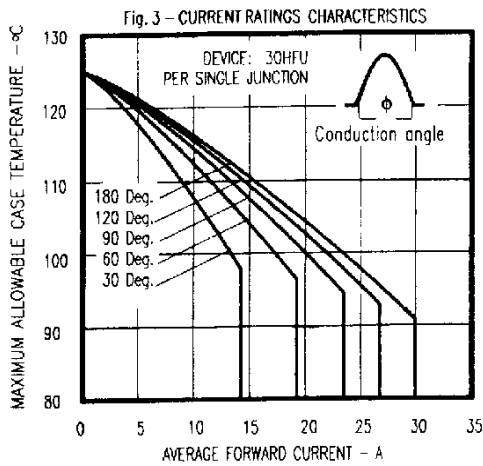


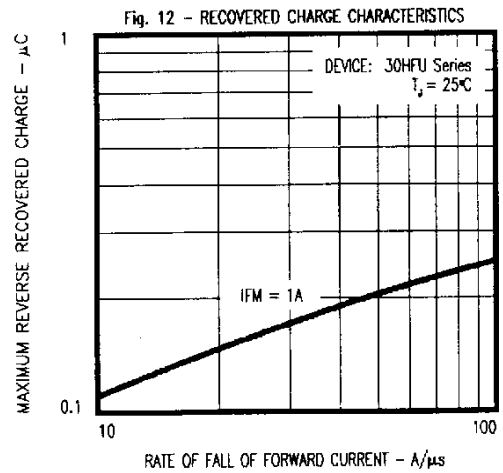
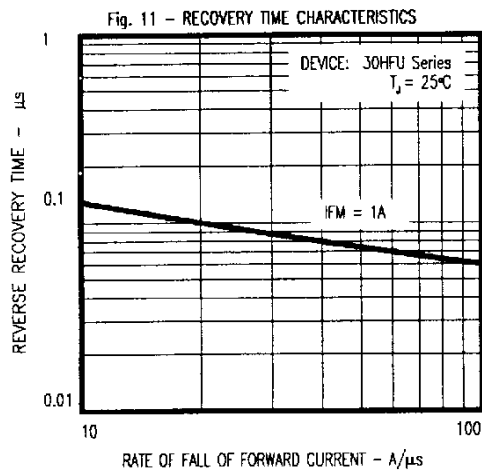
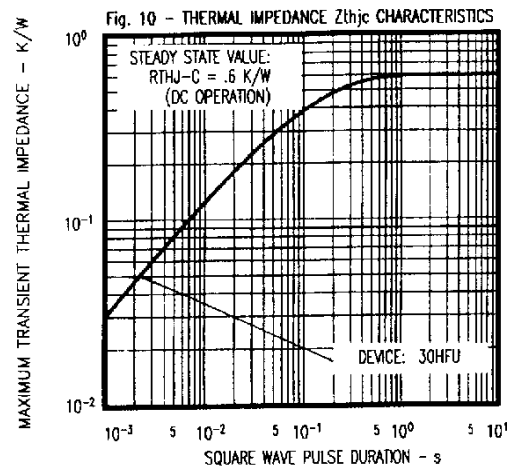
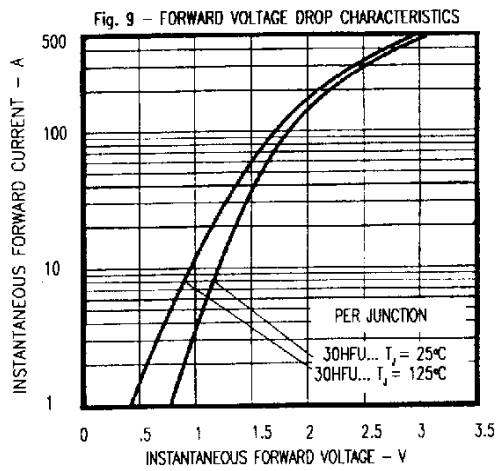
Fig.2 - Maximum Forward Energy Loss Per Pulse Characteristics





30HFU Series

INTERNATIONAL RECTIFIER



INTERNATIONAL RECTIFIER



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Sales Offices, Agents and Distributors in Major Cities throughout the World.

In the interest of product improvement INTERNATIONAL RECTIFIER reserves the right to change specifications at any time without notice 9/88