New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

301U(R) SERIES

STANDARD RECOVERY DIODES

Stud Version

300A

Features

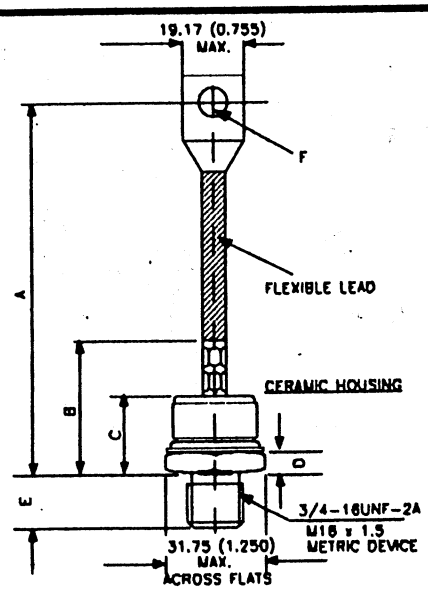
- Wide current range
- High voltage ratings up to 2500V
- High surge current capabilities
- Stud cathode and stud anode version

TypicalApplications,

- Converters
- Power supplies
- Machine tool controls
- High power drives
- Medium traction applications

Major Ratings and Characteristics

Parameters		301U(R) 80 to 200	301U(R) 250	Units
$I_{F(AV)}$		330	300	A
	@ T_C	120	120	°C
$I_{F(RMS)}$		520	470	A
I_{FSM}	@ 50Hz	8250	6050	A
	@ 60Hz	8640	6335	A
I^2t	@ 50Hz	340	183	KA^2s
	@ 60Hz	311	167	KA^2s
V_{RRM} range		800 to 2000	2500	V
T_J		- 40 to 180	- 40 to 180	C



	A	B	C	D	E	F	
mm	143.0	57.15	29.33	8.94	21.03	8.39	R14 A
Inches	5.63	2.250	1.155	0.352	0.828	0.330	
mm	210	53	28.5	16	21	8.3	R14 B
Inches	8.26	2.08	1.12	0.62	0.826	0.32	

Case style DO-9 (DO205AB)

ELECTRICAL SPECIFICATIONS

Voltage Ratings

Type number	Voltage Code	V_{RRM}, maximum repetitive peak reverse voltage V	V_{RSM}, maximum non-repetitive peak rev. voltage V	I_{RRM} max. @ $T_J = T_J$ max mA
301U(R)	80	800	900	15
	120	1200	1300	
	160	1600	1700	
	200	2000	2100	
	250	2500	2600	

Forward Conduction

Parameter		301U(R) 80 to 200	301U(R) 250	Units	Conditions		
$I_{F(AV)}$	Max. average forward current	330	300	A	180° conduction, half sine wave		
	@ Case temperature	120	120	°C			
$I_{F(RMS)}$	Max. RMS forward current	520	470	A	DC @ T_C = 115°C (08 to 20), T_C = 102°C (25)		
I_{FSM}	Max. peak, one-cycle forward, non-repetitive surge current	8250	6050	A	t = 10ms	No voltage reapplied	Sinusoidal half wave. Initial $T_J = T_J$ max.
		8640	6335		t = 8.3ms		
		6940	5090		t = 10ms	100% V_{RRM} reapplied	
		7270	5330		t = 8.3ms		
I^2t	Maximum I^2t for fusing	340	183	KA^2s	t = 10ms	No voltage reapplied	
		311	167		t = 8.3ms		
		241	129		t = 10ms	100% V_{RRM} reapplied	
		220	118		t = 8.3ms		
$I^2\sqrt{t}$	Maximum $I^2\sqrt{t}$ for fusing	3400	1830	$KA^2\sqrt{s}$	t = 0.1 to 10ms, no voltage reapplied		
$V_{F(TO)1}$	Low level value of threshold voltage	0.77	0.90	V	(16.7% x π x $I_{F(AV)}$ < I < π x $I_{F(AV)}$), $T_J = T_J$ max.		
$V_{F(TO)2}$	High level value of threshold voltage	0.84	0.97		(I > π x $I_{F(AV)}$), $T_J = T_J$ max		
r_{f1}	Low level value of forward slope resistance	0.49	0.59	mΩ	(16.7% x π x $I_{F(AV)}$ < I < π x $I_{F(AV)}$), $T_J = T_J$ max		
r_{f2}	High level value of forward slope resistance	0.49	0.55		(I > π x $I_{F(AV)}$), $T_J = T_J$ max		
V_{FM}	Max. forward voltage drop	1.22	1.46	V	I_{pk} = 942A, $T_J = T_J$ max, t_p = 10ms sinusoidal wave		