



SUSSEX

SEMICONDUCTOR, INC.

12251 TOWN LAKE DRIVE, FORT MYERS, FLORIDA, 33913 • TEL: (941) 768-6800 • FAX: (941) 768-6868

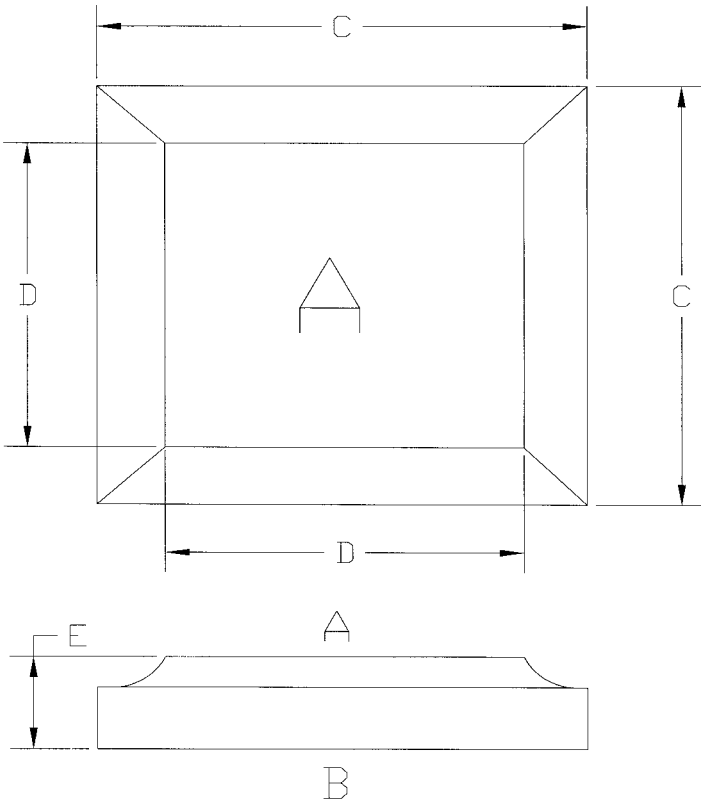
**.25 TO 100 AMP FAST AND
ULTRA-FAST RECOVERY
RECTIFIER DIE**

GLASS PASSIVATED FAST AND ULTRA-FAST RECOVERY DIE

REVERSE VOLTAGES - 50 TO 1000 VOLTS

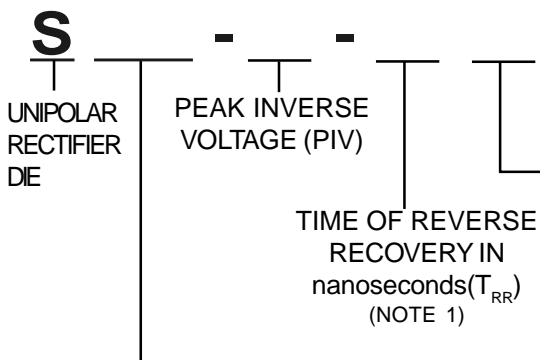
FORWARD CURRENT - .25 TO 100 AMPS

- .25 TO 100 AMP FAST AND ULTRA FAST RECOVERY DIE SPECIFICATIONS**
- ◆ Fast Recovery Time: 150 nanoseconds Max.
 - ◆ Ultra Fast Recovery Time: 30 to 50 nanoseconds Max.
 - ◆ Each Die Fully Glass Passivated; Needs No Encapsulation
 - ◆ Each Die Individually Tested
 - ◆ Unipolar
 - ◆ Operating Temperature: -65 to 150°C
 - ◆ Storage Temperature: -65 to 175°C
 - ◆ Standard Metallization Ni-Ni-Au
 - ◆ For Wire Bond Applications Gold Or Aluminum Metallization is Available
 - ◆ Polarity: A-Anode B-Cathode



CUSTOM ORDERING SPECIFIER

DIE SPECIFICATIONS



'A'-SIDE METALLIZATION	
CODE	MATERIAL
A	ALUMINUM
E	GOLD
BLANK	NI-NI-AU (STANDARD)

NOTES

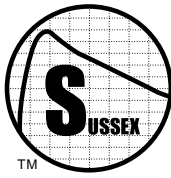
- NOTE 1:**
- ◆ T_{RR} REVERSE RECOVERY TEST CONDITIONS: FORWARD CURRENT (I_F) = 1AMP, REVERSE CURRENT (I_R) = 1 AMP, REVERSE CURRENT RECOVERY (I_{RR}) = .5 AMP
 - ◆ BREAKDOWN VOLTAGES GREATER THAN 400 VOLTS ON ULTRA-FAST RECOVERY DIE WILL RESULT IN A HIGHER FORWARD VOLTAGE

CONTACT FACTORY FOR ELECTRICAL SPECIFICATIONS ON CUSTOM PARTS

TABLE 3B - UNIPOLAR DIE DIMENSION SPECIFICATIONS

◆ ALL TOLERANCES ARE ±.005" ◆ ALL DIMENSIONS ARE IN INCHES

SIZE CODE	C	D	E	FORWARD CURRENT	SIZE CODE	C	D	E	FORWARD CURRENT	SIZE CODE	C	D	E	FORWARD CURRENT
0.25	0.018	0.010	0.009	.25 AMPS	5	0.095	0.080	0.009	5 AMPS	30	0.180	0.160	0.009	30 AMPS
0.75	0.030	0.020	0.009	.75 AMPS	8	0.100	0.085	0.009	8 AMPS	35	0.200	0.180	0.009	35 AMPS
1	0.040	0.030	0.015	1 AMP	16	0.115	0.100	0.009	16 AMPS	40	0.227	0.200	0.009	40 AMPS
1.5	0.055	0.040	0.009	1.5 AMPS	20	0.125	0.110	0.009	20 AMPS	70	0.260	0.240	0.009	70 AMPS
2	0.070	0.055	0.009	2 AMPS	22	0.132	0.120	0.009	22 AMPS	100	0.360	0.330	0.009	100 AMPS
3	0.085	0.070	0.009	3 AMPS	25	0.165	0.150	0.009	25 AMPS					



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**.25 TO 100 AMP FAST
RECOVERY RECTIFIER DIE
ELECTRICAL SPECIFICATIONS**

TABLE 4B - FAST RECOVERY RECTIFIER DIE ELECTRICAL SPECIFICATIONS (NOTE 1)

JEDEC PART NUMBER (NOTE 2)	SUSSEX PART NUMBER	MAX. AVERAGE FORWARD RECTIFIED OUTPUT CURRENT $T_J=25^\circ\text{C}$ AMPS	MAX. INSTANTANEOUS FORWARD VOLTAGE		MAX. LEAKAGE CURRENT (I_R) @ V_{DC}		PEAK FORWARD SURGE CURRENT (NOTE 3) AMPS	PEAK INVERSE VOLTAGE (PIV) VOLTS	MAX. RMS INPUT VOLTAGE V_{RMS} VOLTS	TIME OF RECOVERY (T_{RR}) (NOTE 4) nanosec
			FORWARD VOLTAGE TEST CURRENT (I_F) AMPS	PEAK FORWARD VOLTAGE @ I_F VOLTS	V_{DC} VOLTS	I_R μA				
1N5615	S1-200-150	1.0	1.0	1.6	200	1	40	200	140	150
1N5617	S1-400-150	1.0	1.0	1.6	400	1	40	400	280	150
1N5619	S1-600-150	1.0	1.0	1.6	600	1	40	600	420	150
1N5621	S1-800-150	1.0	1.0	1.6	800	1	40	800	560	150
1N5623	S1-1000-150	1.0	1.0	1.6	1000	5	40	1000	700	150
N/A	S1.5-200-150	1.5	1.5	1.4	200	5	50	200	140	150
N/A	S1.5-400-150	1.5	1.5	1.4	400	5	50	400	280	150
N/A	S1.5-600-200	1.5	1.5	1.4	600	5	50	600	420	150
N/A	S1.5-800-200	1.5	1.5	1.4	800	5	50	800	560	150
N/A	S1.5-1000-200	1.5	1.5	1.4	1000	5	50	1000	700	150
1N5415	S3-50-150	3.0	3.0	1.5	50	1	200	50	35	150
1N5416	S3-100-150	3.0	3.0	1.5	100	1	200	100	70	150
1N5417	S3-200-150	3.0	3.0	1.5	200	1	200	200	140	150
1N5418	S3-400-150	3.0	3.0	1.5	400	1	200	400	280	150
1N5419	S3-500-150	3.0	3.0	1.5	500	1	200	500	350	150
1N5420	S3-600-200	3.0	3.0	1.5	600	1	200	600	420	200
N/A	S3-800-200	3.0	3.0	1.5	800	5	200	800	560	200
N/A	S3-1000-300	3.0	3.0	1.5	1000	10	200	1000	700	300
N/A	S16-200-150	16.0	16.0	1.5	200	10	300	200	140	150
N/A	S16-400-150	16.0	16.0	1.5	400	10	300	400	280	150
N/A	S16-600-200	16.0	16.0	1.5	600	10	300	600	420	200
N/A	S16-800-200	16.0	16.0	1.5	800	10	300	800	560	200
N/A	S16-1000-300	16.0	16.0	1.5	1000	10	300	1000	700	300

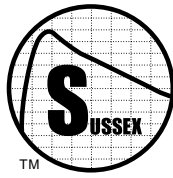
NOTES

NOTE 1: ♦ ELECTRICAL CHARACTERISTICS MEASURED AT A JUNCTION TEMPERATURE (T_J) OF 25°C UNLESS OTHERWISE STATED

NOTE 2: ♦ JEDEC PART NUMBERS REFER TO PACKAGED DEVICES. THE DIES INDICATED BY THESE NUMBERS, IF PROPERLY PACKAGED, WILL OPERATE WITH THE SAME PERFORMANCE

NOTE 3: ♦ PEAK FORWARD SURGE CURRENT MEASURED FROM A SINGLE SINE-WAVE BEING SUPERIMPOSED ON A RATED LOAD (JEDEC METHOD)

NOTE 4: ♦ TRR - REVERSE RECOVERY TEST CONDITIONS:
FORWARD CURRENT (I_F) = 1 AMP, REVERSE CURRENT (I_R) = 1 AMP, REVERSE CURRENT RECOVERY (I_{RR}) = .5 AMP



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.25 TO 100 AMP ULTRA-FAST RECOVERY RECTIFIER DIE ELECTRICAL SPECIFICATIONS

TABLE 5B - ULTRA FAST RECOVERY RECTIFIER DIE ELECTRICAL SPECIFICATIONS (NOTE 1)

JEDEC PART NUMBER (NOTE 2)	SUSSEX PART NUMBER (NOTE 3)	MAX. AVERAGE FORWARD RECTIFIED OUTPUT CURRENT $T_J=25^\circ\text{C}$ AMPS	MAX. INSTANTANEOUS FORWARD VOLTAGE		MAX. LEAKAGE CURRENT (I_R) @ V_{DC}		PEAK FORWARD SURGE CURRENT (NOTE 4) AMPS	PEAK INVERSE VOLTAGE (PIV) VOLTS	MAX. RMS INPUT VOLTAGE V_{RMS} VOLTS	TIME OF RECOVERY (T_{RR}) (NOTE 5) nanosec
			FORWARD VOLTAGE TEST CURRENT (I_F) AMPS	PEAK FORWARD VOLTAGE @ I_F VOLTS	V_{DC} VOLTS	I_R mA				
N/A	S1-100-50	1.0	1.0	0.975	100	1	40	100	70	50
N/A	S1-200-50	1.0	1.0	0.975	200	1	40	200	140	50
N/A	S1-400-50	1.0	1.0	1.000	400	1	40	400	280	50
N/A	S1-600-50	1.0	1.0	1.300	600	1	40	600	420	50
N/A	S1-800-50	1.0	1.0	1.500	800	1	40	800	560	50
N/A	S1-1000-50	1.0	1.0	1.600	1000	10	40	1000	700	50
1N5802	HOUSE NUMBER	2.5	1.0	0.875	50	1	50	50	35	25
1N5803	HOUSE NUMBER	2.5	1.0	0.875	75	1	50	75	52.5	25
1N5804	HOUSE NUMBER	2.5	1.0	0.875	100	1	50	100	70	25
1N5805	HOUSE NUMBER	2.5	1.0	0.875	125	1	50	125	87.5	25
1N5806	HOUSE NUMBER	2.5	1.0	0.875	150	1	50	150	105	25
N/A	S3-200-50	3.0	3.0	0.975	200	10	200	200	140	50
N/A	S3-400-50	3.0	3.0	1.000	400	10	200	400	280	50
N/A	S3-600-50	3.0	3.0	1.500	600	10	200	600	420	50
N/A	S3-800-50	3.0	3.0	1.600	800	10	200	800	560	50
N/A	S3-1000-50	3.0	3.0	1.800	1000	10	200	1000	700	50
1N5807	HOUSE NUMBER	6.0	4.0	0.875	50	5	300	50	35	30
1N5808	HOUSE NUMBER	6.0	4.0	0.875	75	5	300	75	52.5	30
1N5809	HOUSE NUMBER	6.0	4.0	0.875	100	5	300	100	70	30
1N5810	HOUSE NUMBER	6.0	4.0	0.875	125	5	300	125	87.5	30
1N5811	HOUSE NUMBER	6.0	4.0	0.875	150	5	300	150	105	30
N/A	S16-50-35	16.0	16.0	0.975	50	10	300	50	35	35
N/A	S16-100-35	16.0	16.0	0.975	100	10	300	100	70	35
N/A	S16-200-35	16.0	16.0	0.975	200	10	300	200	140	35
N/A	S16-400-50	16.0	16.0	1.000	400	10	300	400	280	50
N/A	S16-600-50	16.0	16.0	1.800	600	10	300	600	420	50
N/A	S16-800-50	16.0	16.0	1.800	800	10	300	800	560	50
N/A	S16-1000-50	16.0	16.0	2.000	1000	10	300	1000	700	50
N/A	S25-50-50	25.0	25.0	0.975	50	20	500	50	35	50
N/A	S25-100-50	25.0	25.0	0.975	100	20	500	100	70	50
N/A	S25-200-50	25.0	25.0	0.975	200	20	500	200	140	50
N/A	S25-400-50	25.0	25.0	1.000	400	20	500	400	280	50
N/A	S25-600-50	25.0	25.0	1.800	600	20	500	600	420	50
N/A	S25-800-75	25.0	25.0	1.800	800	25	500	800	560	75
N/A	S25-1000-75	25.0	25.0	2.000	1000	25	500	1000	700	75
N/A	S40-50-50	40.0	40.0	0.975	50	20	1000	50	35	50
N/A	S40-100-50	40.0	40.0	0.975	100	20	1000	100	70	50
N/A	S40-200-50	40.0	40.0	0.975	200	20	1000	200	140	50
N/A	S40-400-50	40.0	40.0	1.000	400	20	1000	400	280	50
N/A	S40-600-50	40.0	40.0	1.800	600	20	1000	600	420	50
N/A	S40-800-50	40.0	40.0	1.800	800	25	1000	800	560	50
N/A	S40-1000-50	40.0	40.0	2.000	1000	25	1000	1000	700	50
N/A	S70-50-50	70.0	70.0	0.975	50	20	1200	50	35	50
N/A	S70-100-50	70.0	70.0	0.975	100	20	1200	100	70	50
N/A	S70-200-50	70.0	70.0	0.975	200	20	1200	200	140	50

NOTES

NOTE 1: ♦ ELECTRICAL CHARACTERISTICS MEASURED AT A JUNCTION TEMPERATURE (T_J) OF 25°C UNLESS OTHERWISE STATED

NOTE 2: ♦ JEDEC PART NUMBERS REFER TO PACKAGED DEVICES. THE DIES INDICATED BY THESE NUMBERS, IF PROPERLY PACKAGED, WILL OPERATE WITH THE SAME PERFORMANCE

NOTE 3: ♦ CONTACT FACTORY DIRECTLY FOR INFORMATION REGARDING A HOUSE NUMBER

NOTE 4: ♦ PEAK FORWARD SURGE CURRENT MEASURED FROM A SINGLE SINE-WAVE BEING SUPERIMPOSED ON A RATED LOAD (JEDEC METHOD)

NOTE 5: ♦ T_{RR} - REVERSE RECOVERY TEST CONDITIONS:
FORWARD CURRENT (I_F) = 1 AMP, REVERSE CURRENT (I_R) = 1 AMP, REVERSE CURRENT RECOVERY (I_{RR}) = .5 AMP



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**.25 TO 100 AMP FAST AND
ULTRA-FAST RECOVERY
RECTIFIER DIE CONTINUED**

FIGURE 3B - TYPICAL FORWARD CHARACTERISTICS

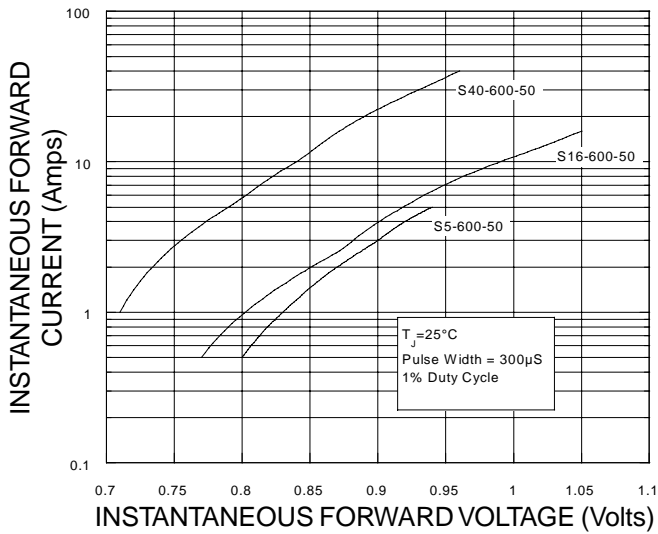


FIGURE 4B - TYPICAL REVERSE CHARACTERISTICS @ 25°C

