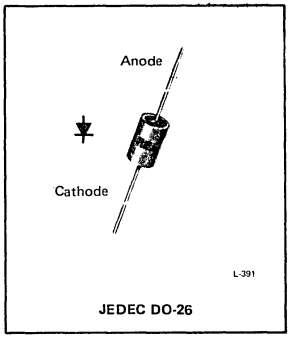
RCA
Solid State
Division

Rectifiers
1N3255
1N3193 1N3195 1N3253 1N3256
1N3194 1N3196 1N3254 1N3563



JEDEC DO-26

Diffused-Junction Silicon Rectifiers

For Industrial and Consumer-Product Applications

Features:

- Cylindrical design with axial leads for simple handling and installation
- Compact, hermetically sealed metal case (0.405" max. length; 0.240" max. dia.)
- Insulated types 1N3253, 1N3254, 1N3255, 1N3256, and 1N3563 have transparent, high-dielectric-strength plastic sleeve over metal case
- High maximum forward-current ratings — up to 750 milliamperes at 75 °C
- Peak-reverse-voltage ratings — 200 to 1000 volts
- Maximum free-air operating temperature — 100 °C
- Designed to meet stringent temperature-cycling and humidity requirements of critical industrial and consumer-product applications

RCA-1N3193, 1N3194, 1N3195, 1N3196, 1N3253, 1N3254, 1N3255, 1N3256, and 1N3563 are hermetically sealed silicon rectifiers of the diffused-junction type utilizing small cylindrical metal cases and axial leads. Types 1N3253, 1N3254, 1N3255, and 1N3256 are insulated versions of types 1N3193, 1N3194, and 1N3196, respectively. Type 1N3563 is an insulated rectifier which does not have an uninsulated equivalent.

RECTIFIER SERVICE (For a supply-line frequency of Hz)

MAXIMUM RATINGS, *Absolute-Maximum Values:*

	For resistive or inductive load					*For capacitor-input filter*					
	1N3193 1N3253	1N3194 1N3254	1N3195 1N3255	1N3196 1N3256	1N3563	1N3193 1N3253	1N3194 1N3254	1N3195 1N3255	1N3196 1N3256	1N3563	
PEAK REVERSE VOLTAGE	200	400	600	800	1000	200	400	600	800	1000	volts
RMS SUPPLY VOLTAGE	140	280	420	560	700	70	140	210	280	350	volts
FORWARD CURRENT: For free-air temperatures up to 75°C. For free-air temperatures above 75°C, see Rating Chart. DC	750	750	750	500	400	500	500	500	400	300	ma
PEAK RECURRENT	—	—	—	—	—	6	6	6	5	4	amp
SURGE — For "turn-on" time of 2 milliseconds	—	—	—	—	—	35	35	35	35	35	amp
FREE-AIR-TEMPERATURE RANGE: Operating	-65 to +100										°C
Storage	-65 to +175										°C
LEAD TEMPERATURE: For 10 seconds maximum	255										°C

Characteristics, *At a Free-Air Temperature of 25°C:*

	1N3193 1N3253	1N3194 1N3254	1N3195 1N3255	1N3196 1N3256	1N3563	
Maximum Instantaneous Forward Voltage Drop at dc forward current of 0.5 ampere	1.2	1.2	1.2	1.2	1.2	volts
Maximum Reverse Current: Dynamic, at T_{FA} = 75°C*	0.2	0.2	0.2	0.2	0.2	ma
Static, at T_{FA} = 25°C**	0.005	0.005	0.005	0.005	0.005	ma

*At max. peak reverse voltage and max. dc forward current.

**At max. peak reverse voltage and zero forward current.

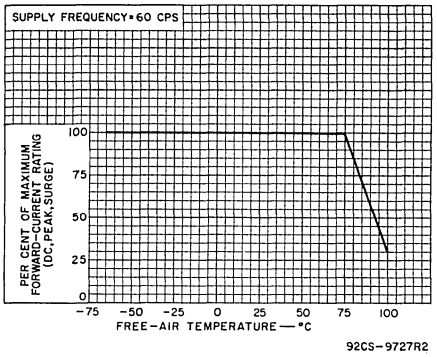


Fig.1— Rating chart for types 1N3193 to 1N3196, 1N3253 to 1N3256, and 1N3563.

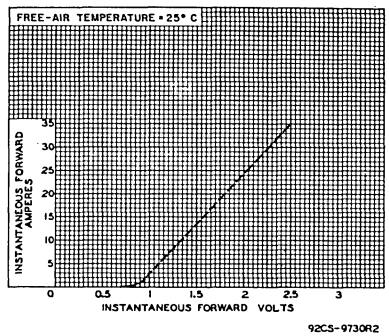


Fig.2— Typical forward characteristics for types 1N3193 to 1N3196, 1N3253 to 1N3256, and 1N3563.

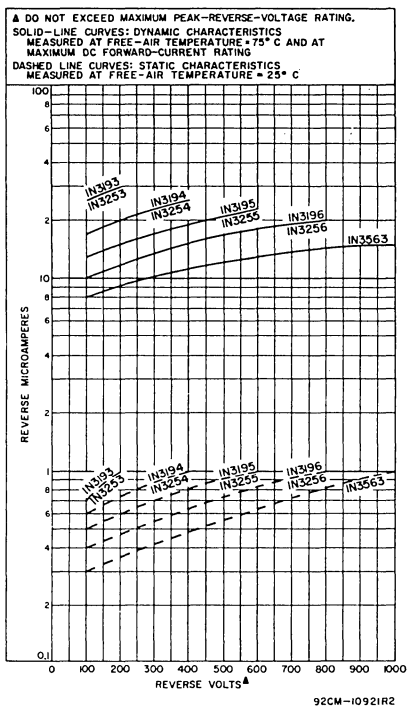


Fig.3— Typical reverse characteristics for types 1N3193 to 1N3196, 1N3253 to 1N3256, and 1N3563.

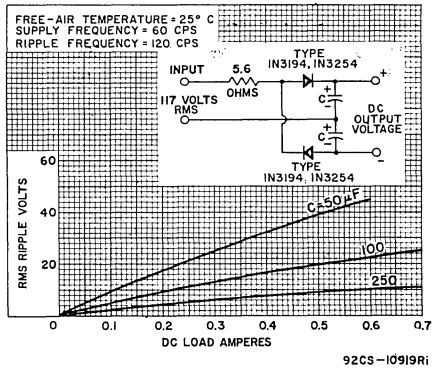


Fig.4— Typical operation characteristics of types 1N3194 and 1N3254 in full-wave voltage-doubler service.

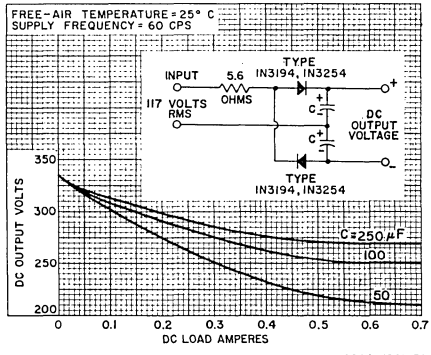


Fig.5— Typical operation characteristics of types 1N3194 and 1N3254 in full-wave voltage-doubler service.

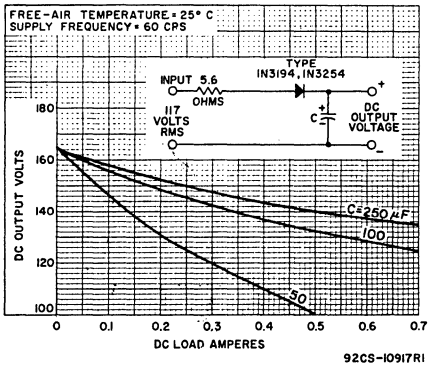


Fig.6— Typical operation characteristics of types 1N3194 and 1N3254 in half-wave rectifier service.

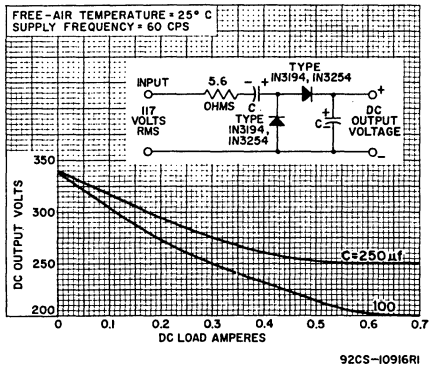


Fig.7— Typical operation characteristics of types 1N3194 and 1N3254 in half-wave voltage-doubler service.

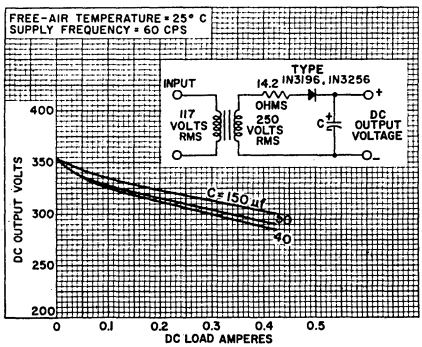


Fig.8— Typical operation characteristics of types 1N3196 and 1N3256 in half-wave rectifier service.

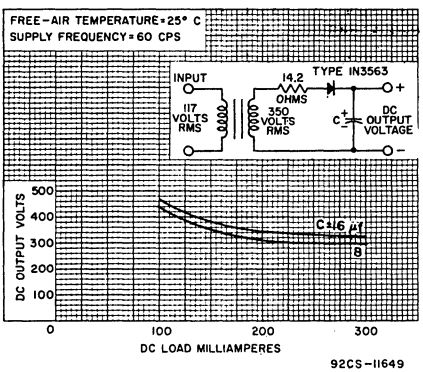


Fig.9— Typical operation characteristics of type 1N3563 in half-wave rectifier service.

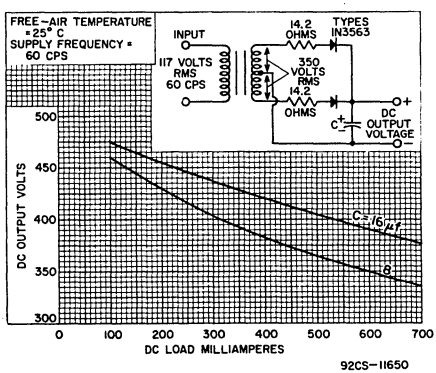


Fig.10—Typical operation characteristics of type 1N3563 in full-wave rectifier service.