

Germanium Diodes

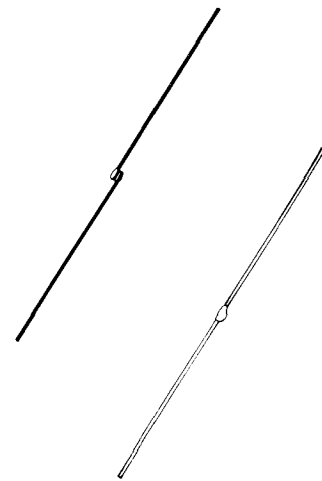
P TYPE	
TD261,A	TD271,A
TD262,A	TD272,A
TD263,A,B	TD273,A,B
TD264,A	TD274,A
TD265,A	TD275,A
TD266,A	TD276,A

The General Electric TD261,A through TD266A series of tunnel diodes are extremely fast, P-Type germanium devices with peak currents of 2.2, 4.7; 10, 22, 50 and 100 ma. Among the unusual features offered by these tunnel diodes are high I_p/I_V ratios and C/I_p ratios as low as 0.025 pf/ma. New manufacturing techniques provide a high temperature tunnel diode capable of 100°C storage and operation resulting in high reliability performance. Types TD271,A through TD276,A are built in a special microwave package which has electrical characteristics of the TD260 line with a series inductance of .15 mh. Specially selected units offering parameter variations or tighter control are also available.

absolute maximum ratings: (25°C)

	TD261 TD261A TD271 TD271A	TD262 TD262A TD272 TD272A	TD263 TD263A TD263B TD273 TD273A TD273B	TD264 TD264A TD274 TD274A	TD265 TD265A TD275 TD275A	TD266 TD266A TD276 TD276A	
Maximum Power Dissipation	1.5	3.5	7	7.5	18	35	mw
Operating and Storage Temperature	←----- -55 to +100°C -----→						°C
Lead Temperature	←----- 230 -----→						°C
	1/16" ± 1/32" from case for 10 seconds						

*Derate maximum forward current 1% per °C for ambients in excess of 25°C.



electrical characteristics: (25°C)

	COLOR DOT**	BROWN			BROWN/GRAY			RED			RED/GRAY			
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Peak Point Current	I_p	2.0	2.2	2.4	2.0	2.2	2.4	4.2	4.7	5.2	4.2	4.7	5.2	ma
Valley Point Current	I_V		.20	.31		.22	.31		.45	.60		.45	.60	ma
Peak Point Voltage	V_p		70	100		80	110		80	110		90	120	mv
Valley Point Voltage	V_V		390			390			390			400		mv
Forward Voltage														
($I_F = I_p$)	V_{FP}^*	500	540	650	500	580	650	500	560	650	500	575	650	mv
($I_F = .25 I_p$)	V_{FS}	420	500		420	500		435	510		435	530		mv
Total Series Inductance														
TD260	L_S		1.5			1.5			1.5			1.5		nh
TD270	L_S		.15			.15			.15			.15		nh
Total Series Resistance	R_S		5			7			3.5			4.0		ohms
Valley Point Terminal Capacitance	C_V		1.8	3.0		0.65	1.0		2.8	6.0		0.65	1.0	pf
Rise Time	t_r^{***}		430			160			320			74		Psec

*Max V_{FP} on TD270 devices is 675 mv

**TD270 series marked with white cathode dot only

***Switching speed with constant current drive, $t_r \approx \frac{V_{FP} - V_p}{I_p - I_V} C_V$

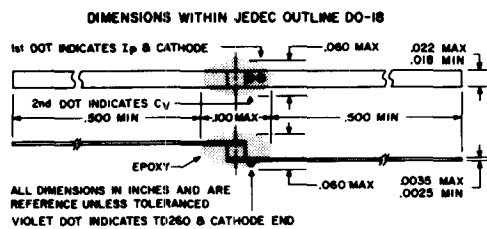
TD261,A – 66,A	TD271,A – 76,A
TD263,B	TD273,B

electrical characteristics: (25°C)

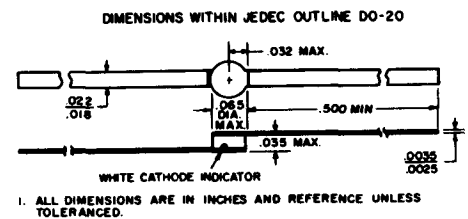
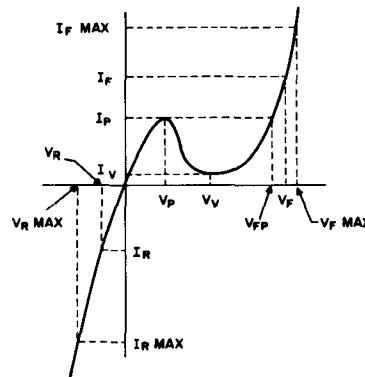
	COLOR DOT**	ORANGE			ORANGE/GRAY			ORANGE/ WHITE			YELLOW			YELLOW/GRAY			
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Peak Point Current	I_P	9.0	10	11	9.0	10	11	9.0	10	11	20	22	24	20	22	24	ma
Valley Point Current	I_V		0.9	1.4		0.9	1.4		0.9	1.4		2.7	3.1		2.7	3.1	ma
Peak Point Voltage	V_P		75	100		80	110		90	120		90	115		100	130	mv
Valley Point Voltage	V_V		400			410			420			425			425		mv
Forward Voltage																	
($I_F = I_P$)	V_{FP}^*	500	560	650	520	570	650	550	600	670	500	580	650	550	610	680	mv
($I_F = .25 I_P$)	V_{FS}	450	510		450	530		450	540			520		460	540		mv
Total Series Inductance																	
TD260	L_S		1.5			1.5			1.5			1.5			1.5		nh
TD270	L_S		.15			.15			.15			.15			.15		nh
Total Series Resistance	R_S		1.7			2.0			2.5			1.8			2.0		ohms
Valley Point Terminal Capacitance	C_V		6.5	9.0		3.5	5.0		1.2	2.0		7.0	18		2.5	4.0	pf
Rise Time	t_r^{***}		350			190			68			185			64		Psec

electrical characteristics: (25°C)

	COLOR DOT**	GREEN			GREEN/GRAY			BLUE			BLUE/GRAY						
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.				
Peak Point Current	I_P	45	50	55	45	50	55	90	100	110	90	100	110	ma			
Valley Point Current	I_V		6.0	8.5		6.0	8.5		12.0	17.5		12.0	17.5	ma			
Peak Point Voltage	V_P		110	180		130	200		150	210		180	260	mv			
Valley Point Voltage	V_V		425			425			450			450		mv			
Forward Voltage																	
($I_F = I_P$)	V_{FP}	520	625	700	550	640	750	520	650	720	550	680	800	mv			
($I_F = .25 I_P$)	V_{FS}		530			480	550		530			550		550		mv	
Total Series Inductance																	
TD260	L_S		1.5			1.5			1.5			1.5			1.5		nh
TD270	L_S		.15			.15			.15			.15			.15		nh
Total Series Resistance	R_S		1.4			1.5			1.1			1.2			1.2		ohms
Valley Point Terminal Capacitance	C_V		8.5	25		3.0	5.0		10.0	35		4.0	6.0		6.0		pf
Rise Time	t_r^{***}		100			35			57			22			22		Psec



TD260 SERIES



TD270 SERIES