




1.3 W Glass Passivated Zener Diodes

<p>DO-204AL (DO-41)</p> 	<p><b>Voltage</b> 6.2 to 220 V</p>	<p><b>Power Dissipation</b> 1.3 W</p>	
			
	<p><b>FEATURE</b></p> <ul style="list-style-type: none"> <li>• Glass passivated chip junction</li> <li>• Hiperectifier structure for high reliability</li> <li>• Cavity-free glass-passivated junction</li> <li>• Low leakage current</li> <li>• High surge current and zener capability</li> <li>• Low differential resistance</li> <li>• Low forward voltage drop</li> <li>• Solder dip 260 °C, 10s</li> <li>• AEC-Q101 qualified</li> <li>• Component in accordance to RoHS 2011/65/EU and WEEE 2002/96/EC</li> <li>• Halogen-free available according to IEC 61249-2-21 definition</li> </ul>		
	<p><b>MECHANICAL DATA</b></p> <ul style="list-style-type: none"> <li>• <b>Case:</b> DO-204AL (DO-41). Epoxy meets UL 94V-0 flammability rating.</li> <li>• <b>Polarity:</b> Color band denotes cathode end.</li> <li>• <b>Terminals:</b> Matte tin plated leads, solderable per MIL-STD-750 Method 2026, J-STD-002 and JESD22-B102. Consumer grade, meets JESD 201 class 1A whisker test.</li> </ul>		
<p><b>TYPICAL APPLICATIONS</b></p> <p>Used for basic regulation functions in most electronic applications, Zener diodes offer a cheaper alternative to IC solutions.</p>			

Maximum Ratings and Electrical Characteristics at 25 °C

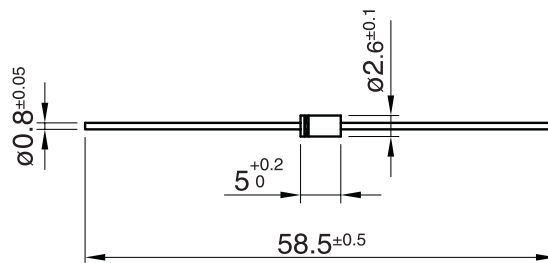
SYMBOL	TYPE NUMBER	VALUE	UNIT
$P_{tot}$	Power dissipation at $T_{amb} = 25\text{ °C}$	1.3	W
$T_j$	Operatin Temperature Range	-55 to +175	°C
$T_{stg}$	Storage Temperature Range	-55 to +175	°C
$V_F$	Max. Forward voltage drop at $I_F = 0.2\text{ A}$	1.0	V
$R_{thj-a}$	Max. thermal resistance at 10 mm. Lead length	60	°C/W

## 1.3 W Glass Passivated Zener Diodes

### Ordering information

PREFERRED P/N	PACKAGE CODE	DELIVERY MODE	BASE QUANTITY	UNIT WEIGHT (g)
BZX85C20GP AMP	AMP	AMMO BOX	5,000	0.325
BZX85C20GP TR	TR	14" diameter tape and reel	5,000	0.325
BZX85C20GP HF AMP	AMP	AMMO BOX	5,000	0.325
BZX85C20GP HF TR	TR	14" diameter tape and reel	5,000	0.325

### Package Outline Dimensions: (mm) DO-204AL (DO-41)



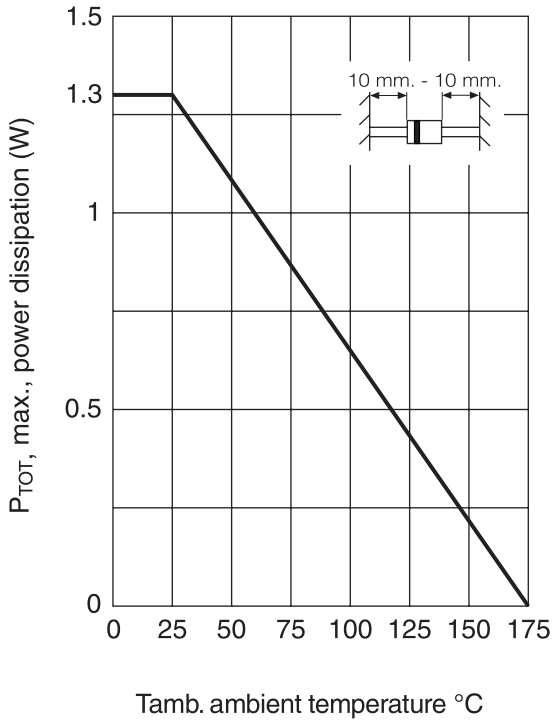
## 1.3 W Glass Passivated Zener Diodes

Type	Zener Voltage Range $V_Z$ at $I_{ZT}$		Maximum Zener Impedance $Z_{ZT}$ at $I_{ZT}$	Temperature Coefficient of Zener Voltage in (% / °C)			Max Reverse Leakage current $I_R$ @ $V_R$		Surge Current (10 ms) $I_{ZS}$	Maximum Regulator Current $I_{ZM}$
	(V)	(mA)		(Ω)	Minimum	Typical	Maximum	(μA)		
BZX85C6V2GP	5.8 - 6.6	35	4	+ 0.010	+ 0.025	+ 0.055	5	3	1263	170
BZX85C6V8GP	6.4 - 7.2	35	3.5	+ 0.015	+ 0.035	+ 0.060	5	4	1157	155
BZX85C7V5GP	7.0 - 7.9	35	3	+ 0.020	+ 0.035	+ 0.065	5	5	1055	140
BZX85C8V2GP	7.7 - 8.7	25	5	+ 0.030	+ 0.055	+ 0.070	5	6	958	130
BZX85C9V1GP	8.5 - 9.6	25	5	+ 0.035	+ 0.055	+ 0.075	5	7	868	120
BZX85C10GP	9.4 - 10.6	25	7	+ 0.040	+ 0.060	+ 0.080	1	5.0	786	105
BZX85C11GP	10.4 - 11.6	20	8	+ 0.045	+ 0.0625	+ 0.080	1	5.0	718	97
BZX85C12GP	11.4 - 12.7	20	9	+ 0.045	+ 0.065	+ 0.085	1	7.0	656	88
BZX85C13GP	12.4 - 14.1	20	10	+ 0.050	+ 0.0675	+ 0.085	1	7.0	591	79
BZX85C15GP	13.8 - 15.6	15	15	+ 0.050	+ 0.0725	+ 0.090	1	10	534	71
BZX85C16GP	15.3 - 17.1	15	15	+ 0.050	+ 0.0725	+ 0.090	1	10	487	66
BZX85C18GP	16.8 - 19.1	15	20	+ 0.055	+ 0.075	+ 0.090	1	10	436	62
BZX85C20GP	18.8 - 21.2	10	24	+ 0.055	+ 0.075	+ 0.090	1	10	393	56
BZX85C22GP	20.8 - 23.3	10	25	+ 0.055	+ 0.075	+ 0.090	1	12	358	52
BZX85C24GP	22.8 - 25.6	10	25	+ 0.055	+ 0.075	+ 0.090	1	12	326	47
BZX85C27GP	25.1 - 28.9	8	30	+ 0.055	+ 0.075	+ 0.090	1	14	288	41
BZX85C30GP	28 - 32	8	30	+ 0.055	+ 0.075	+ 0.090	1	14	260	36
BZX85C33GP	31 - 35	8	35	+ 0.055	+ 0.075	+ 0.090	1	17	238	33
BZX85C36GP	34 - 38	8	40	+ 0.055	+ 0.075	+ 0.090	1	17	219	30
BZX85C39GP	37 - 41	6	50	+ 0.055	+ 0.075	+ 0.090	1	20	203	28
BZX85C43GP	40 - 46	6	50	+ 0.055	+ 0.075	+ 0.090	1	20	181	26
BZX85C47GP	44 - 50	4	90	+ 0.055	+ 0.0775	+ 0.090	1	24	167	23
BZX85C51GP	48 - 54	4	115	+ 0.060	+ 0.0775	+ 0.095	1	24	154	21
BZX85C56GP	52 - 60	4	120	+ 0.060	+ 0.0775	+ 0.095	1	28	139	19
BZX85C62GP	58 - 66	4	125	+ 0.060	+ 0.0775	+ 0.095	1	28	126	16
BZX85C68GP	64 - 72	4	130	+ 0.060	+ 0.0775	+ 0.095	1	34	116	15
BZX85C75GP	70 - 80	4	135	+ 0.060	+ 0.0775	+ 0.095	1	34	104	14
BZX85C82GP	77 - 87	2.7	200	+ 0.060	+ 0.085	+ 0.095	1	41	96	12
BZX85C91GP	85 - 96	2.7	250	+ 0.060	+ 0.085	+ 0.095	1	41	87	10
BZX85C100GP	94 - 106	2.7	350	+ 0.060	+ 0.085	+ 0.095	1	50	79	9.4
BZX85C110GP	104 - 116	2.7	450	+ 0.060	+ 0.085	+ 0.095	1	50	72	8.6
BZX85C120GP	114 - 127	2	550	+ 0.060	+ 0.085	+ 0.095	1	60	66	7.8
BZX85C130GP	124 - 141	2	700	+ 0.060	+ 0.085	+ 0.095	1	60	59	7.0
BZX85C150GP	138 - 156	2	1000	+ 0.060	+ 0.085	+ 0.095	1	75	53	6.4
BZX85C160GP	153 - 171	1.5	1100	+ 0.060	+ 0.085	+ 0.095	1	75	49	5.8
BZX85C180GP	168 - 191	1.5	1670	+ 0.060	+ 0.085	+ 0.095	1	90	44	5.2
BZX85C200GP	188 - 212	1.5	1670	+ 0.060	+ 0.085	+ 0.095	1	90	39	4.7
BZX85C220GP	207 - 234	1.5	1670	+ 0.060	+ 0.085	+ 0.095	1	110	36	4.2

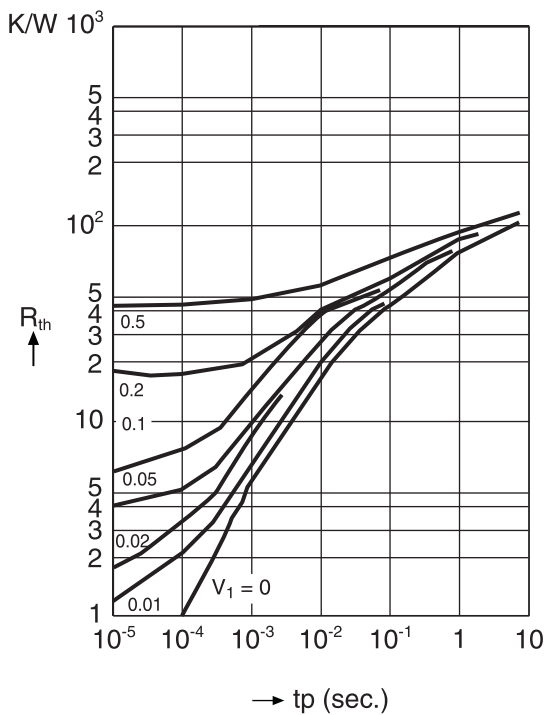
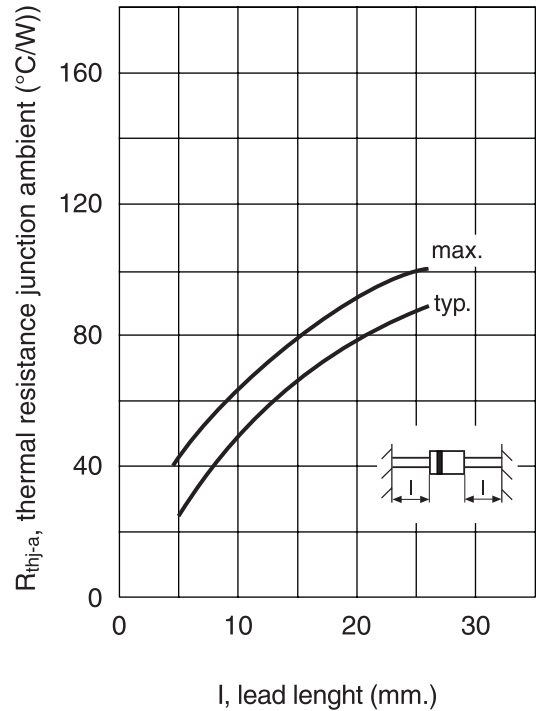
### 1.3 W Glass Passivated Zener Diodes

Rating and Characteristics (Ta 25 °C unless otherwise noted)

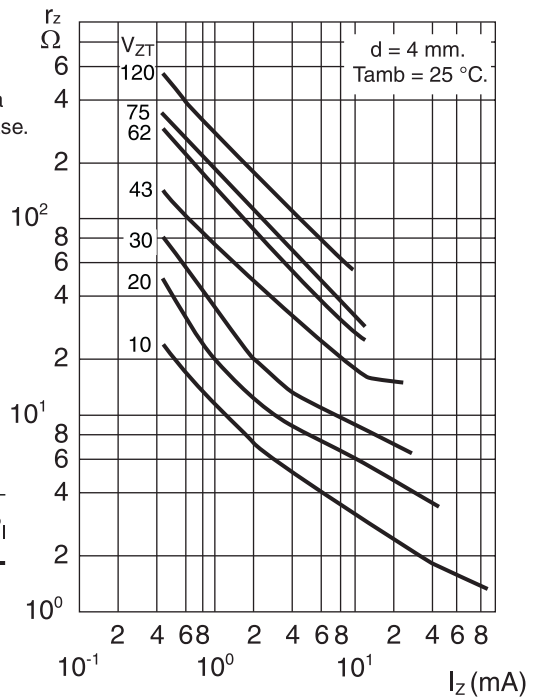
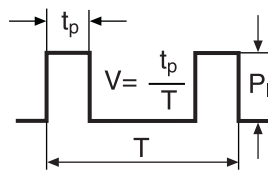
MAXIMUM CONTINUOUS POWER DISSIPATION



THERMAL RESISTANCE



Pulse thermal resistance versus pulse duration. Valid provided that leads are kept at ambient temperature at a distance of 10 mm. from case.



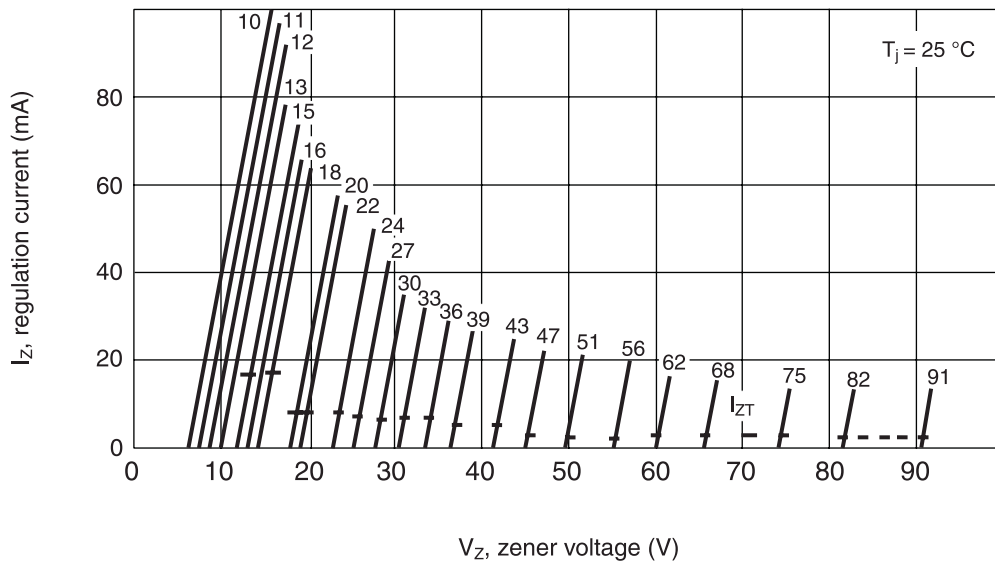
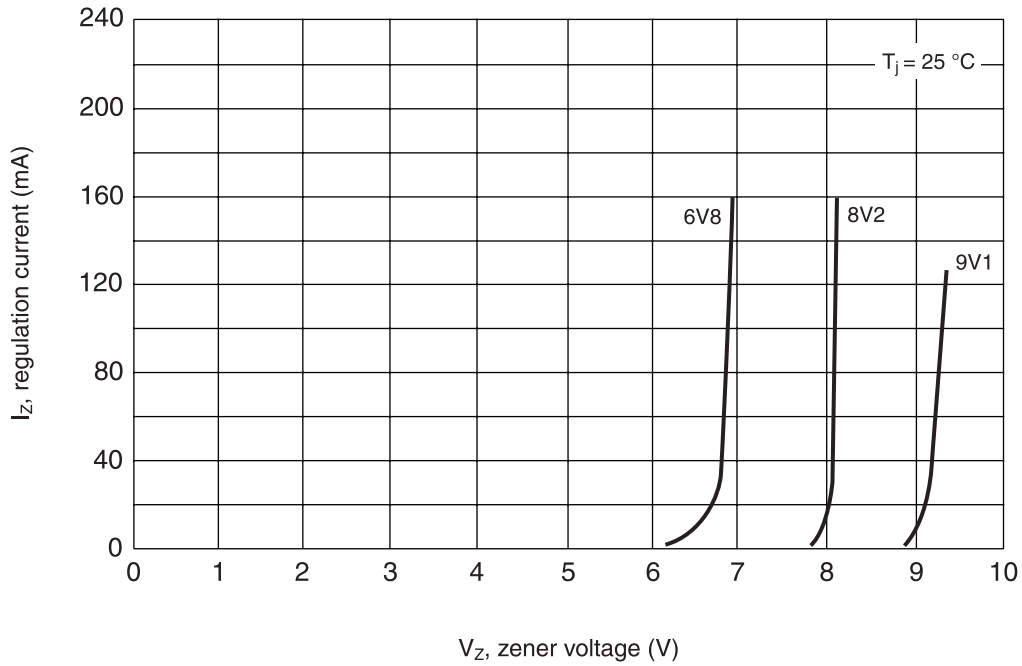
Differential resistance  $r_z$  vs, current  $I_z$  for several regulation voltages  $V_{ZT}$

Test conditions: AC signal, amplitude  $i_z = 10\%$  of  $I_z$ ,  $f = 1$  kHz

**1.3 W Glass Passivated Zener Diodes**

**Rating and Characteristics** (Ta 25 °C unless otherwise noted)

**BREAKDOWN CHARACTERISTICS**



## 1.3 W Glass Passivated Zener Diodes

### Revision History

DATE	REVISION	DESCRIPTION OF CHANGES
14-Dec-2015	0	Original Data Sheet
16-Feb-2018	1	Remove Tolerance Series $\pm 5\%$

### Disclaimer

All product, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise.

Fagor Electrónica, S. Coop., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Fagor"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Fagor makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Fagor disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Fagor's knowledge of typical requirements that are often placed on Fagor products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Fagor's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Fagor products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Fagor product could result in personal injury or death. Customers using or selling Fagor products not expressly indicated for use in such applications do so at their own risk and agree to fully indemnify and hold Fagor and its distributors harmless from and against any and all claims, liabilities, expenses and damages arising or resulting in connection with such use or sale, including attorneys fees, even if such claim alleges that Fagor or its distributor was negligent regarding the design or manufacture of the part. Please contact authorized Fagor personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Fagor. Products names and markings noted herein may be trademarks of their respective owners.