Z4GP60JH THRU Z4GP60MH

FEATURES

* Halogen-free type
* Internal structure with GPRC (glass passivated rectifier chip) inside
* Compliance to RoHS product
* Lead less chip form, no lead damage
* Low power loss, High efficiency
* High current capability
* Plastic package has Underwriters Laboratory Flammability Classification 94V-0
* Patented ZPAK™ Package Technology

APPLICATION

* AC/DC Power Supply
* Communication Equipment

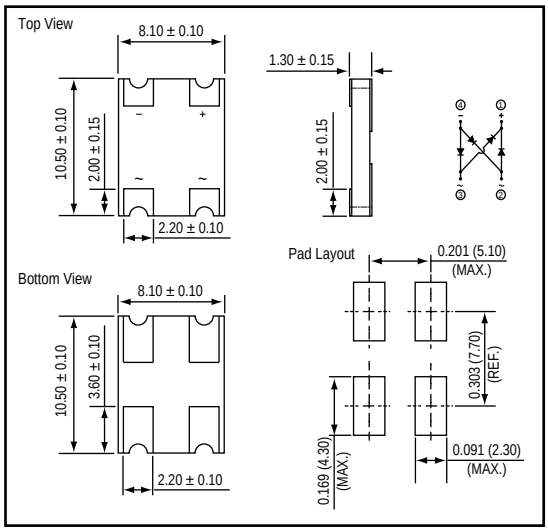
MECHANICAL DATA

Case : Packed with FRP substrate and epoxy underfilled
Terminals : Pure Tin plated (Lead-Free),
solderable per MIL-STD-750, Method 2026.
Polarity : Laser marking symbols
Weight : 0.29 gram

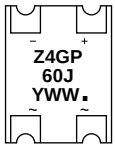
OUTLINE DIMENSIONS

Case : Z4PAK-D

Unit : mm



MARKING



Z4GP = Series code
60 = Amps class (6.0A)
J = Voltage class (600V)
K = Voltage class (800V)
M = Voltage class (1000V)
Y = Last digit of the year
WW = Mfg week
▪ = Halogen-free type

Absolute Maximum Ratings (Ta = 25 °C)

ITEM	Symbol	Conditions	Z4GP60JH	Z4GP60KH	Z4GP60MH	Unit
Repetitive peak reverse voltage	V_{RRM}		600	800	1000	V
Average forward current	$I_{F(AV)}$		6.0			A
Peak forward surge current	I_{FSM}	8.3ms single half sine-wave	160			A
Operating junction and storage temperature Range	T_J,T_{STG}		-55 to +175			°C

Electrical characteristics (Ta = 25 °C)

ITEM	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward voltage	V_F	I_F = 3.0A	-	0.95	1.0	V
Repetitive peak reverse current	I_{RRM}	V_R = Max. V_{RRM} , Ta = 25 °C	-	0.08	5	uA
Current squared time	I^2t	t < 8.3ms , Ta = 25 °C	-	106	-	A^2s
Junction capacitance	C_j	V_R = 4V, f = 1.0 MHz	-	45	-	pF
Thermal resistance	$R_{th(JA)}$	Junction to ambient (NOTE 1)	-	35	-	°C/W
	$R_{th(JC)}$	Junction to case (NOTE 1)	-	15	-	

NOTES : (1) Thermal resistance, junction to ambient, measured on PC board with 50mm^2 (0.03mm thick) land areas.
(2) Preliminary specification

FIG.1 - FORWARD CURRENT DERATING CURVE

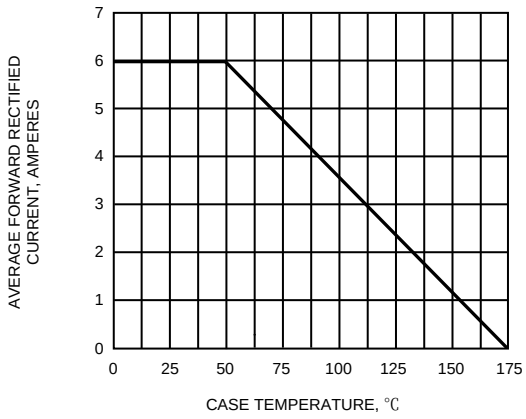


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

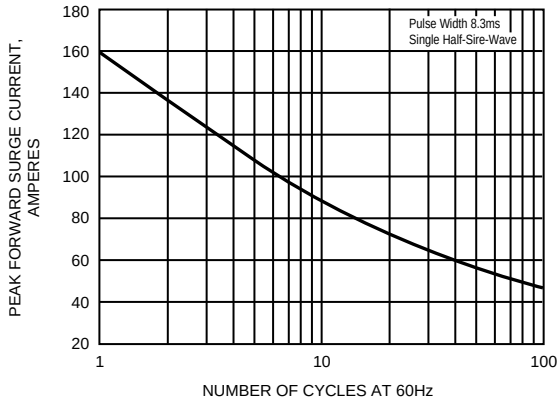


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

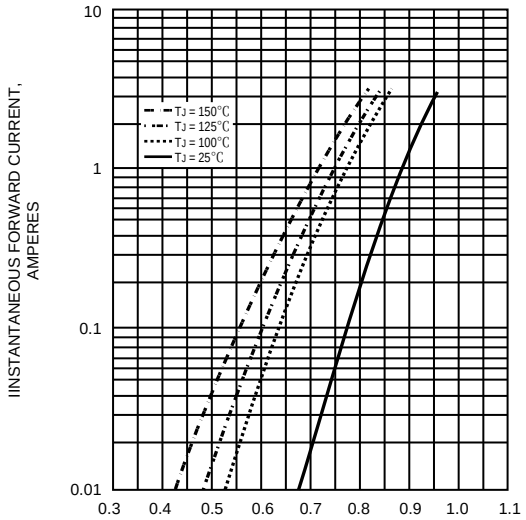


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

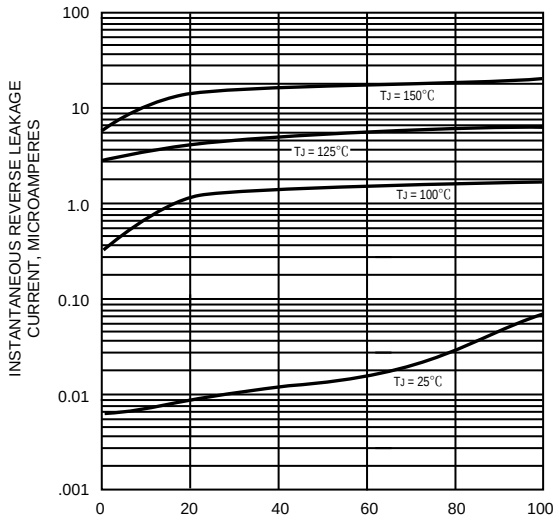
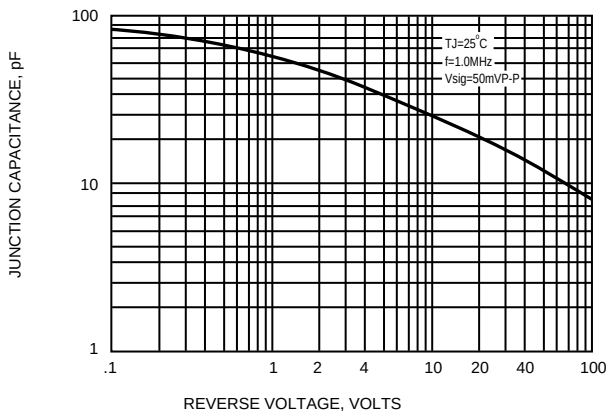


FIG. 5 - TYPICAL JUNCTION CAPACITANCE



DESIGN AND MOUNTING FOR SURFACE MOUNT DIODES

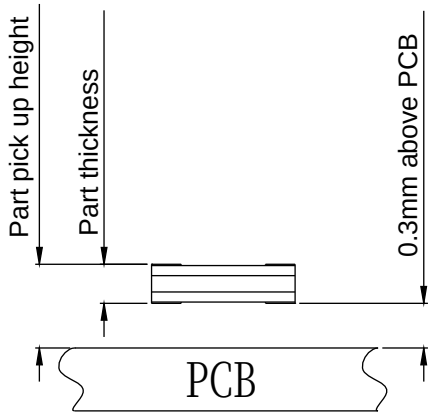
1. In designing steps regarding PCB component layout, do not put surface mount device diodes near high voltage resistors etc, which may generate heat to diode, nor in high-density board. when designing the PCB, implement protection for the surface mount device diode from electrical damage like surge, heating source, magnetic and so on.

2. In any cases do not store diodes in the following conditions or places:
   2.1 When transporting diodes, keep vibration to a minimum otherwise body of diode may be broken. Diode die may then be destroyed by electrostatics.
   2.2 High temperature or high humidity environment.
   2.3 Where corrosive gas or liquid is present.
   2.4 Where mechanical stress or vibration exisis.
   2.5 Where electrosiatic charges are possible.

3. When using the ZOWIE Super chip diodes on assembly operation. Solder paste printing process is recommended and followed by pick and place machine. Since it was designed successfully to achieve extremely thin size, so the parameters of height and location should be adjusted on pick and place machine to avoid missing of parts during operation.

4. As ZOWIE SuperChip series are the surface mount devices with the exceptionally tiny package, whose package thickness is relatively much thinner than that of the general surface mounmt device, so please appropriately set the parameters for the nozzle height as well as the device thickness of the pick and place machine, which would diminish mostly the very normal stress applied upon the device by the nozzle so as to keep the yield level while implementing th mounting operation.

5. The following is a schematic drawing of recommended pick-up height of the SMT parts, the bottom of part above PCB is 0.3mm. If the parts are rejected seriously, please adjust to reduce the height appropriately.



● SMT Nozzle -

We recommend using larger nozzle (for example Z4PAK-D product can be used nozzle size 8x6mm) so that the nozzle can reach parts of the terminals at the top, in order to reduce the impact of the parts inside dice.