

D5FY4R5SY

Schottky Barrier Diodes

45V, 5A

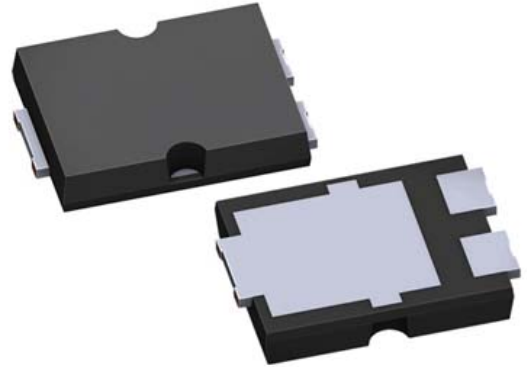
Feature

- Permit high current with a small package
- Low V_F
- Based on AEC-Q101
- Halogen free
- Pb free terminal
- RoHS:Yes

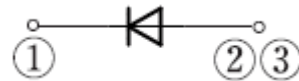
OUTLINE

Package (House Name): FY

Package (JEDEC Code): TO-277A similar



Equivalent circuit



Absolute Maximum Ratings (unless otherwise specified : $T_I=25^{\circ}\text{C}$)

Item	Symbol	Conditions	Ratings	Unit
Storage temperature	T_{stg}		-55 to 175	$^{\circ}\text{C}$
Junction temperature	T_j		-55 to 150	$^{\circ}\text{C}$
Repetitive peak reverse voltage	V_{RRM}		45	V
Average forward current	$I_F(AV)$	50Hz sine wave, Resistance load, With heatsink, $T_I=138^{\circ}\text{C}$ *	5	A
Average forward current	$I_F(AV)$	50Hz sine wave, Resistance load, On alumina substrate, $T_a=25^{\circ}\text{C}$ *	3.2	A
Average forward current	$I_F(AV)$	50Hz sine wave, Resistance load, On glass-epoxy substrate, $T_a=25^{\circ}\text{C}$ *	3	A
Surge forward current	I_{FSM}	50Hz sine wave, Non-repetitive, 1 cycle, Peak value, $T_j=25^{\circ}\text{C}$	220	A

* : See the original Specifications

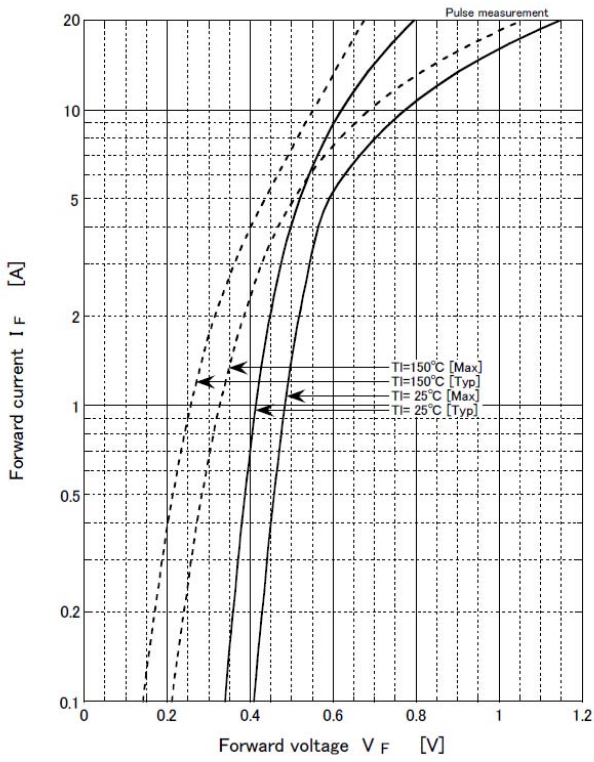
Electrical Characteristics (unless otherwise specified : Tl=25°C)

Item	Symbol	Conditions	Ratings			Unit
			MIN	TYP	MAX	
Forward voltage	V_F	$I_F=5A$, Pulse measurement			0.59	V
Reverse current	I_R	$V_R=45V$, Pulse measurement			0.2	mA
Total capacitance	C_t	$f=1MHz$, $V_R=10V$		155		pF
Thermal resistance	$R_{th(j-l)}$	Junction to lead, With heatsink *			3	°C/W
Thermal resistance	$R_{th(j-a)}$	Junction to ambient, On alumina substrate *			60	°C/W
Thermal resistance	$R_{th(j-a)}$	Junction to ambient, On glass-epoxy substrate *			65	°C/W

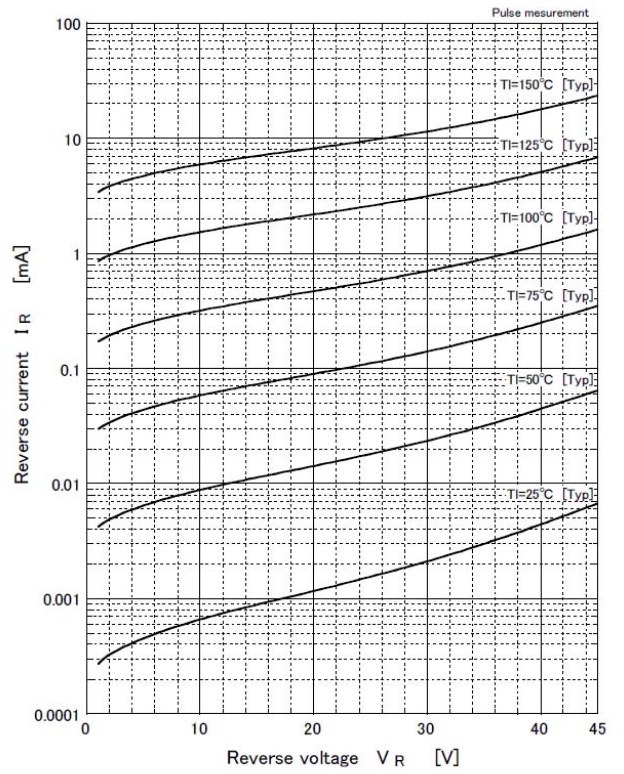
* :See the original Specifications

CHARACTERISTIC DIAGRAMS

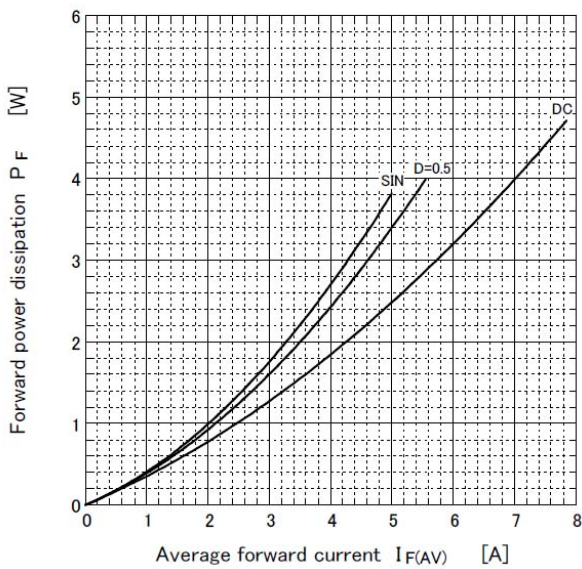
Forward voltage



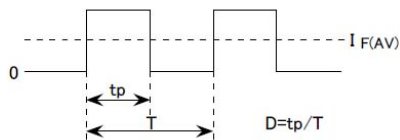
Reverse current



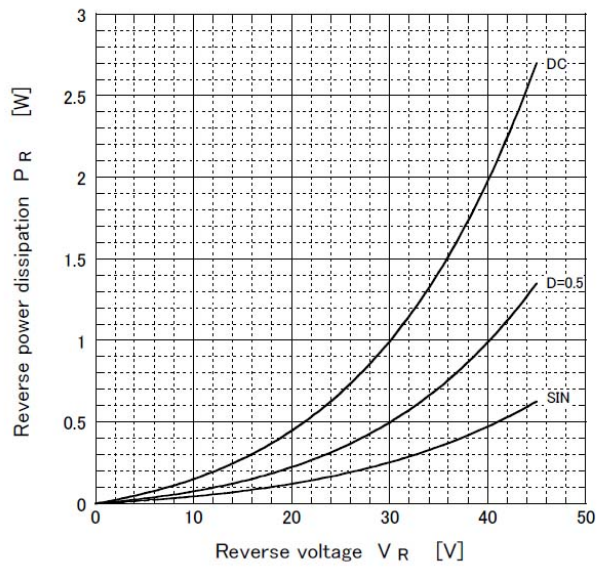
Forward power dissipation



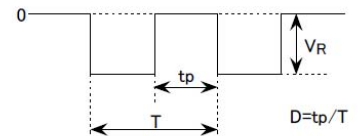
● $T_j = 150^\circ\text{C}$



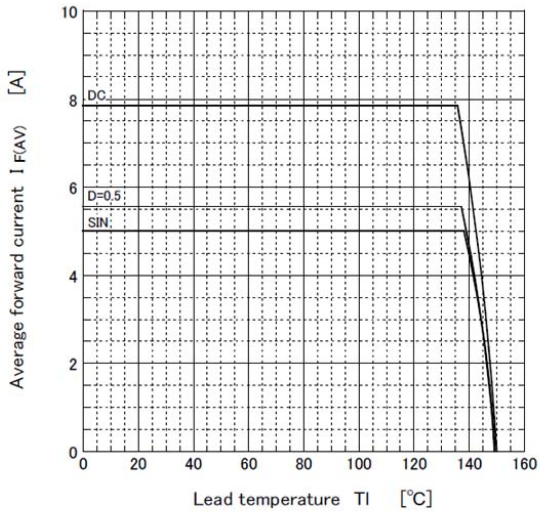
Reverse power dissipation



● $T_j = 150^\circ\text{C}$



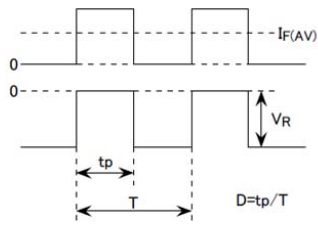
Derating curve



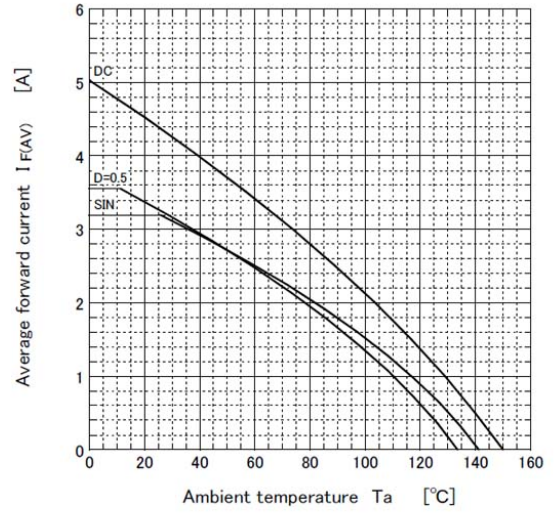
- $V_R = 22.5V$
R-load
With heatsink

- Substrate detail

Type	Alumina
Size	1×1inch
Thickness	1mm
Conductor thickness	20μm
Pattern area	400mm ²



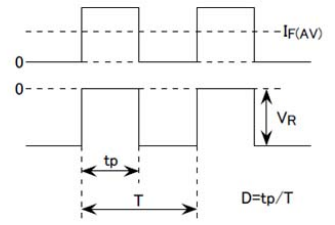
Derating curve



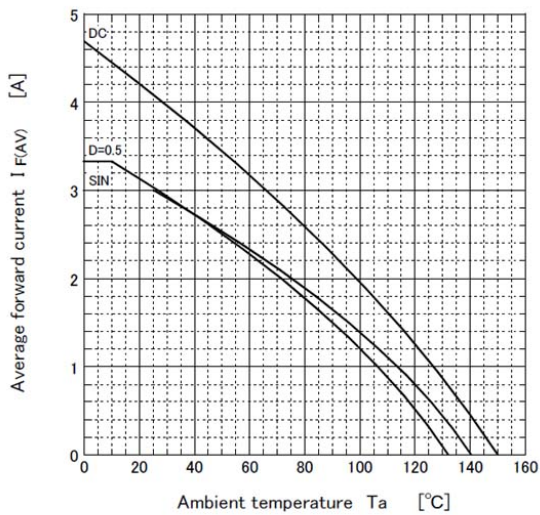
- $V_R = 22.5V$
R-load
Free in air

- Substrate detail

Type	Alumina
Size	1×1inch
Thickness	1mm
Conductor thickness	20μm
Pattern area	400mm ²



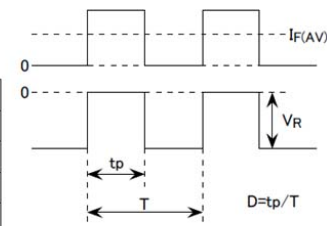
Derating curve



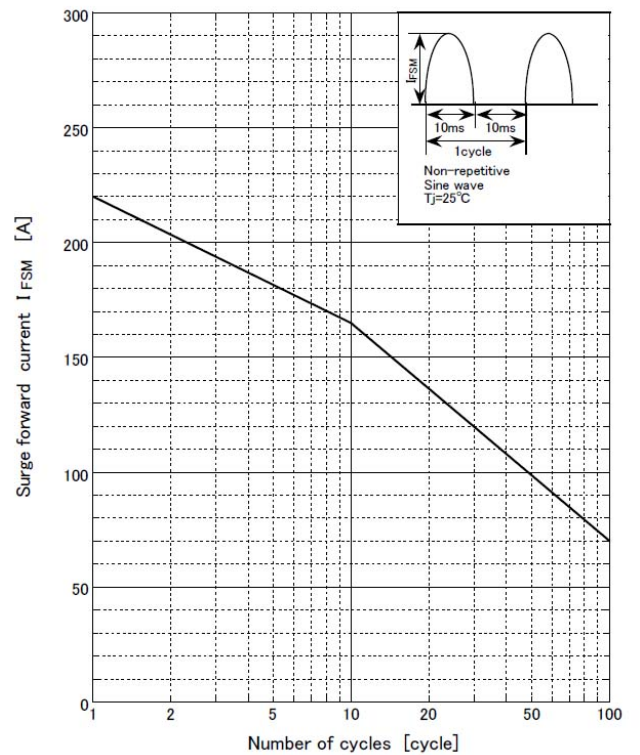
- $V_R = 22.5V$
R-load
Free in air

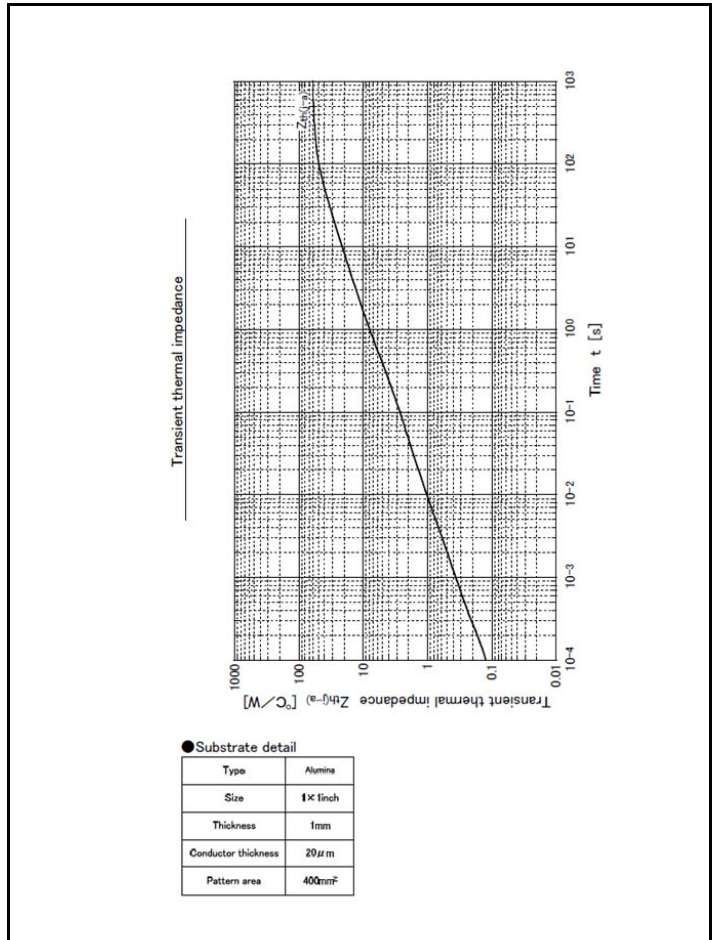
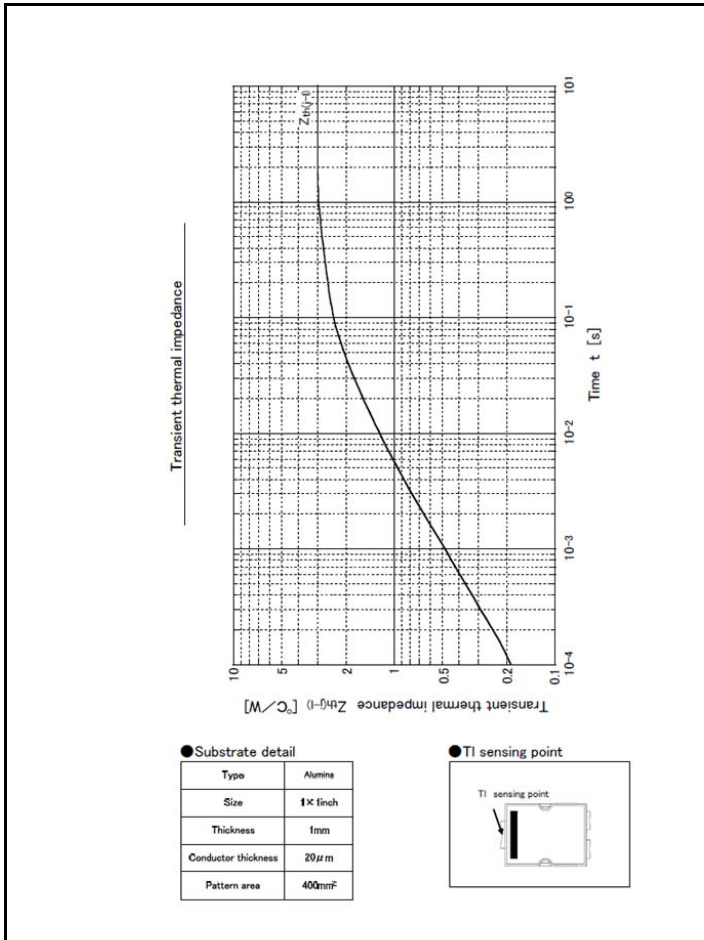
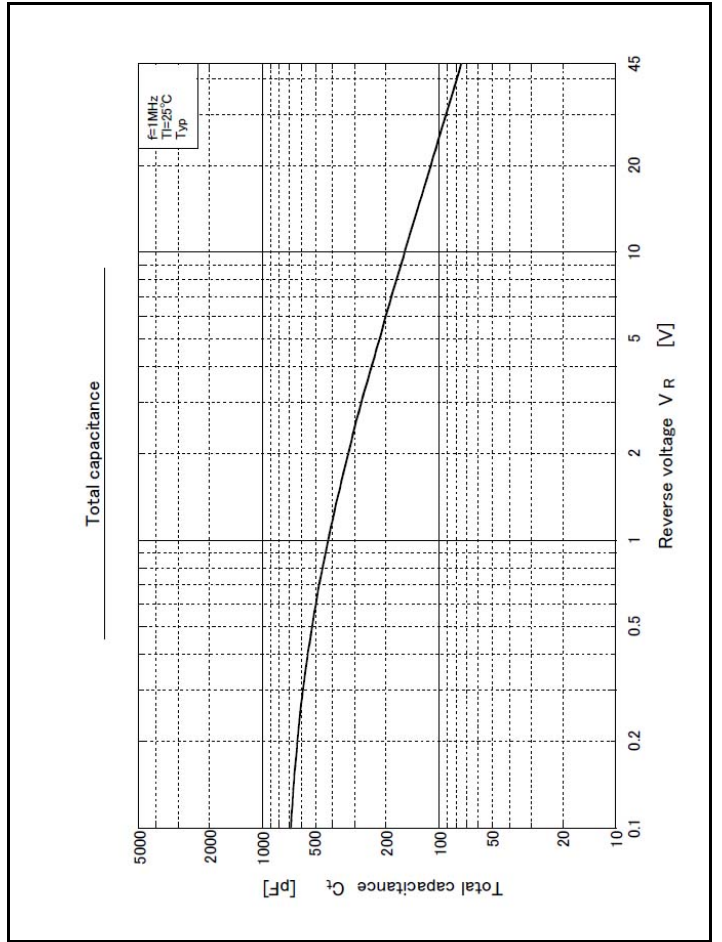
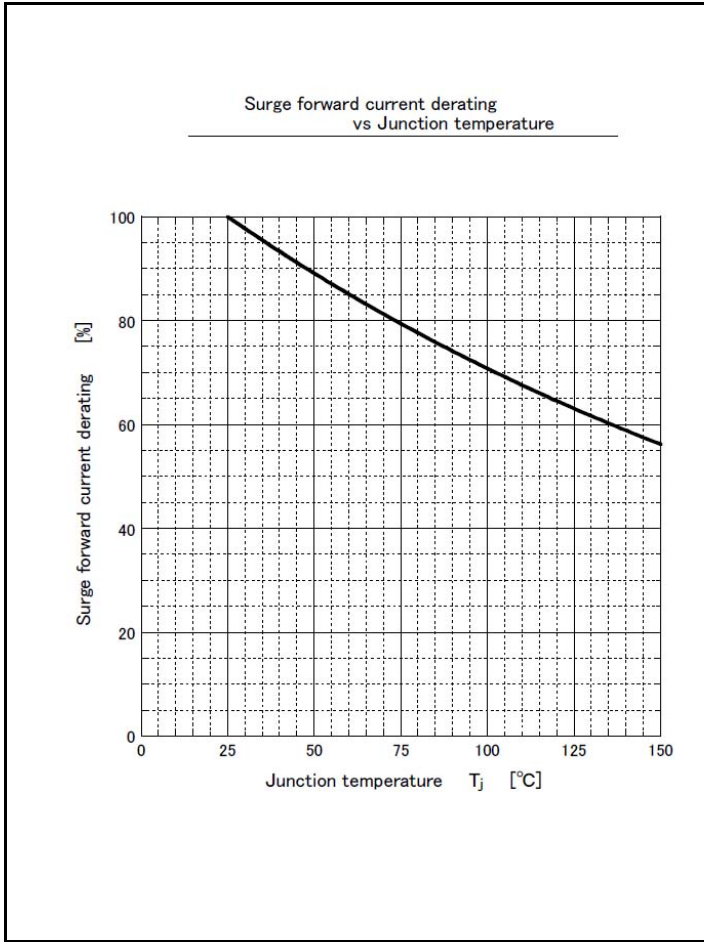
- Substrate detail

Type	Glass-epoxy
Size	1×1inch
Thickness	1mm
Conductor thickness	35μm
Pattern area	400mm ²

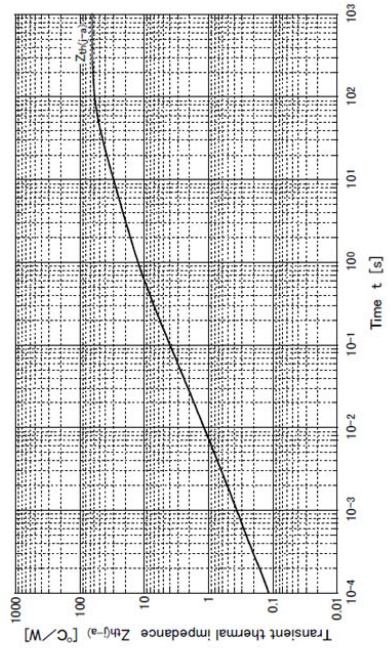


Surge forward current capability





Transient thermal impedance

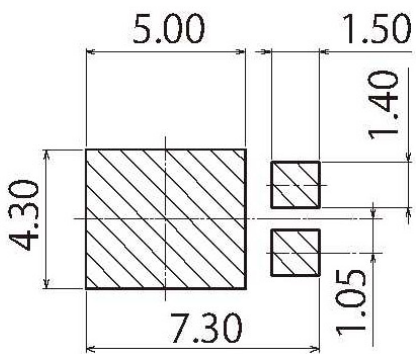
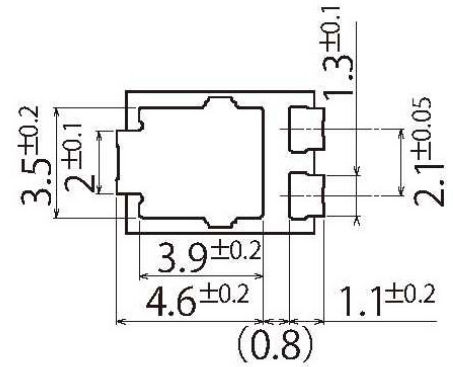
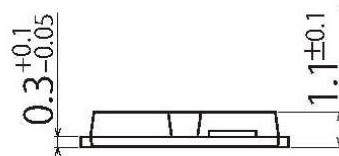
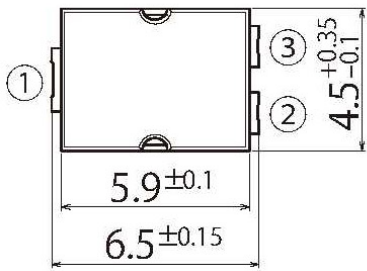


● Substrate detail

Type	Glass-epoxy
Size	1 x 1 inch
Thickness	1mm
Conductor thickness	35μm
Pattern area	400mm ²

G4

JEDEC Code	TO-277A similar
JEITA Code	-
House Name	FY



Referential Soldering Pad

Notes

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