

Features

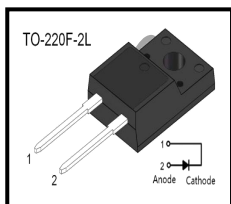
- Reverse withstand voltage 650V
- Zero reverse recovery current
- High working frequency
- Switch characteristics are not affected by temperature
- Fast switching speed
- Positive temperature coefficient of positive pressure drop

Application

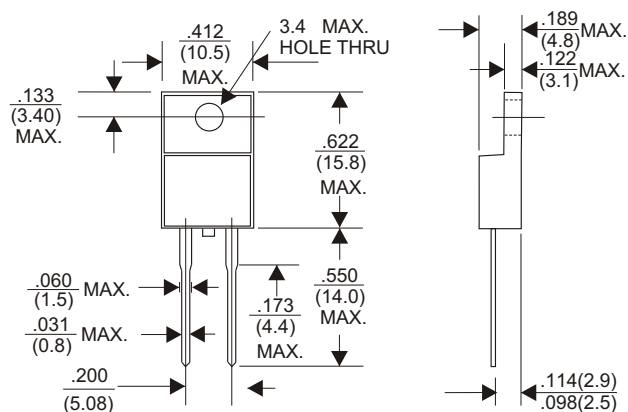
- Switching mode power supply, AC/DC converter
- Power factor correction
- Motor drive
- PV inverter and wind turbine

Advantages

- Very low switching loss
- Higher efficiency
- Low dependence of the system on the heat sink
- No thermal collapse in parallel devices



ITO-220AC(FULLYINSULATED)



Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Test conditions	Value	Unit
Peak repetitive reverse voltage	V_{RRM}		650	V
Working Peak Reverse voltage	V_{RWM}		650	V
DC Blocking Voltage	V_{DC}		650	V
Average rectified output current	$I_{F(AV)}$	$T_C=25^{\circ}C$ $T_C=125^{\circ}C$ $T_C=150^{\circ}C$	24 11 8	A
Forward repetitive peak current	I_{FRM}	$T_C=25^{\circ}C$, $t_p=10ms$, Half Sine Wave $T_C=110^{\circ}C$, $t_p=10ms$, Half Sine Wave	37.5 25.5	A
Forward surge current	I_{FSM}	$T_C=25^{\circ}C$, $t_p=10ms$, Half Sine Wave $T_C=110^{\circ}C$, $t_p=10ms$, Half Sine Wave	70 55	A
Power dissipation	P_{tot}	$T_C=25^{\circ}C$ $T_C=110^{\circ}C$	60 24	W
Junction temperature	T_j		-55 ~ +175	°C
Storage temperature	T_{stg}		-55 ~ +175	°C

GK08D650F

Electrical Characteristics (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Forward voltage	V_F	$I_F = 8\text{ A}$, $T_j = 25^\circ\text{C}$ $I_F = 8\text{ A}$, $T_j = 175^\circ\text{C}$		1.5 2.1	1.8 2.4	V
Reverse current	I_R	$V_R = 650\text{V}$, $T_j = 25^\circ\text{C}$ $V_R = 650\text{V}$, $T_j = 175^\circ\text{C}$		1 15	20 200	μA
Total capacitive charge	Q_C	$V_R = 400\text{V}$, $I_F = 8\text{ A}$ $di/dt = 500\text{A}/\mu\text{s}$, $T_j = 25^\circ\text{C}$		20		nC
Total capacitance	C	$V_R = 0\text{V}$, $T_j = 25^\circ\text{C}$, $f = 1\text{MHz}$ $V_R = 200\text{V}$, $T_j = 25^\circ\text{C}$, $f = 1\text{MHz}$ $V_R = 400\text{V}$, $T_j = 25^\circ\text{C}$, $f = 1\text{MHz}$		390 37 32		pF
Capacitance stored energy	E_C	$V_R = 400\text{V}$		3.0		μJ

Thermal characteristics

Parameter	Symbol	Vaule	Unit
Thermal Resistance - Junction to Case	$R_{\theta JC}$	3.6	$^\circ\text{C}/\text{W}$

RATING AND CHARACTERISTIC CURVES (GK08D650F)

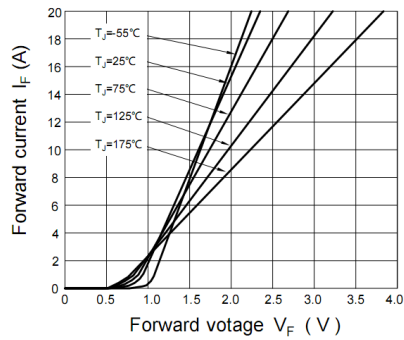


Figure 1. Forward Characteristics

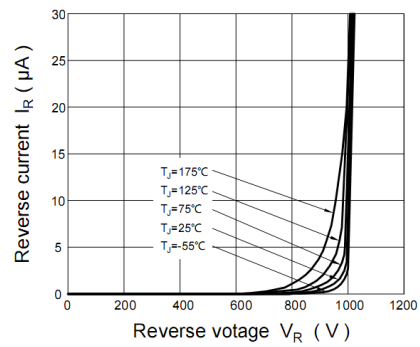


Figure 2. Reverse Characteristics

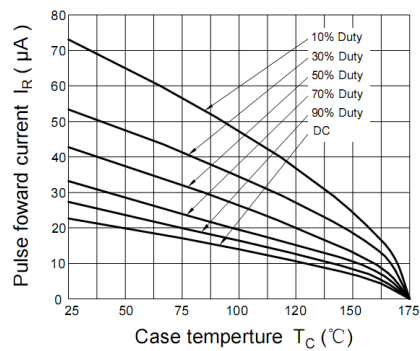


Figure 3. Current Derating

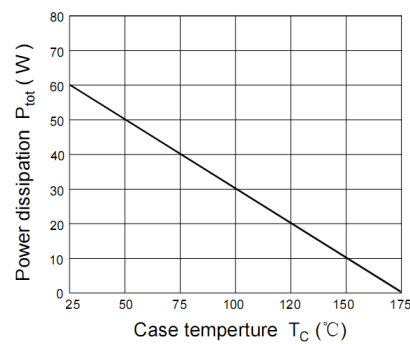


Figure 4. Power Derating

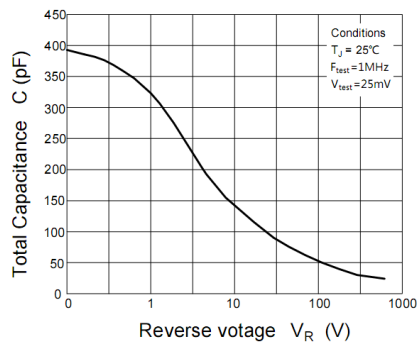


Figure 5. Capacitance vs reverse voltage

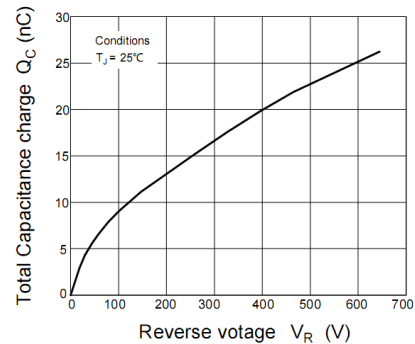


Figure 6. Recovery Charge vs Reverse Voltage

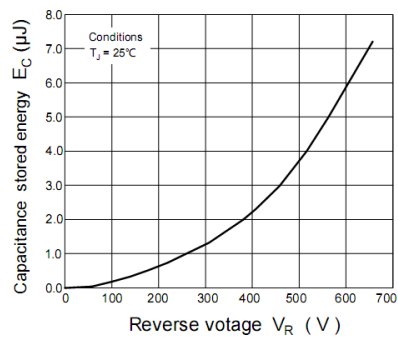


Figure 7. Capacitance stored Energy

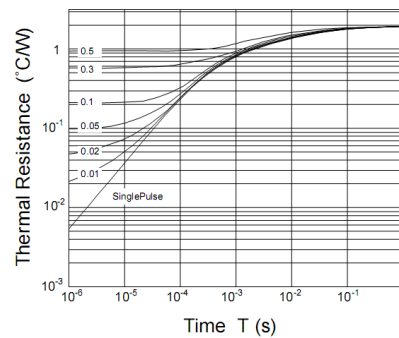


Figure 8. Thermal Impedance