



Features

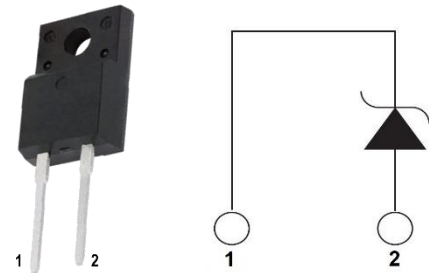
- Zero Forward/Reverse Recovery Current
- High Blocking Voltage
- High Frequency Operation
- Positive Temperature Coefficient on V_F
- Temperature Independent Switching Behavior
- Fully isolated package, 4000Vpk

$V_R = 650\text{ V}$
 $I_F = 10\text{ A (}T_C=106^\circ\text{C)}$
 $Q_C = 23\text{ nC (}V_R=400\text{V)}$

ITO-220AC

Benefits

- Higher System Efficiency
- Parallel Device Convenience without thermal runaway
- Higher Temperature Application
- No Switching loss
- Hard Switching & Higher Reliability
- Environmental Protection



Applications

- PFC Boost Converters
- Chargers
- AC/DC Converters
- DC/DC Converters

Part Number	Package	Marking
LGE3D10065AF	ITO-220AC	LGE3D10065AF

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

Parameter	Symbol	Test conditions	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}		650	V
Peak Reverse Surge Voltage	V_{RSM}		650	V
DC Blocking Voltage	V_R		650	V
Continuous Forward Current	I_F	$T_C=25^\circ\text{C}$	16	A
		$T_C=95^\circ\text{C}$	11	
		$T_C=106^\circ\text{C}$	10	
		$T_C=135^\circ\text{C}$	7	
Non repetitive Forward Surge Current	I_{FSM}	$T_C = 25^\circ\text{C}$, $t_p=10\text{ ms}$, Half Sine Pulse	50	A
		$T_C = 110^\circ\text{C}$, $t_p=10\text{ ms}$, Half Sine Pulse	45	
		$T_C = 25^\circ\text{C}$, $t_p=10\text{ }\mu\text{s}$	400	
Repetitive peak Forward Surge Current	I_{FRM}	$T_C = 25^\circ\text{C}$, $t_p=10\text{ ms}$, Freq = 0.1Hz, 100 cycles, Half Sine Pulse	45	A
		$T_C = 110^\circ\text{C}$, $t_p=10\text{ ms}$, Freq = 0.1Hz, 100 cycles, Half Sine Pulse	40	
Total power dissipation	P_D	$T_C=25^\circ\text{C}$	38	W
Operating Junction Temperature	T_J		-55 to 175	$^\circ\text{C}$
Storage Temperature	T_{STG}		-55 to 175	$^\circ\text{C}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.



Electrical Characteristics

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
DC Blocking Voltage	V_{DC}	$I_R = 250\mu A, T_J = 25^\circ C$	650			V
Forward Voltage	V_F	$I_F = 10A, T_J = 25^\circ C$		1.4	1.75	V
		$I_F = 10A, T_J = 125^\circ C$		1.5		
		$I_F = 10A, T_J = 175^\circ C$		1.7		V
Reverse Current	I_R	$V_R = 650V, T_J = 25^\circ C$		2	50	μA
		$V_R = 650V, T_J = 125^\circ C$		6		μA
		$V_R = 650V, T_J = 175^\circ C$		18		μA
Total Capacitive Charge	Q_C	$V_R = 400V$ $T_J = 25^\circ C$		23		nC
Total Capacitance	C	$V_R = 1V, T_J = 25^\circ C,$ Freq = 1MHz		395		pF
		$V_R = 200V, T_J = 25^\circ C,$ Freq = 1MHz		43		
		$V_R = 400V, T_J = 25^\circ C,$ Freq = 1MHz		32		

Note: This is a majority carrier diode, so there is no reverse recovery charge

Thermal Characteristics

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Thermal Resistance	$R_{th(j-c)}$	Junction to case		3.3	4.0	$^\circ C/W$
	$R_{th(j-a)}$	Junction to ambient		57		



Typical Electrical Curves

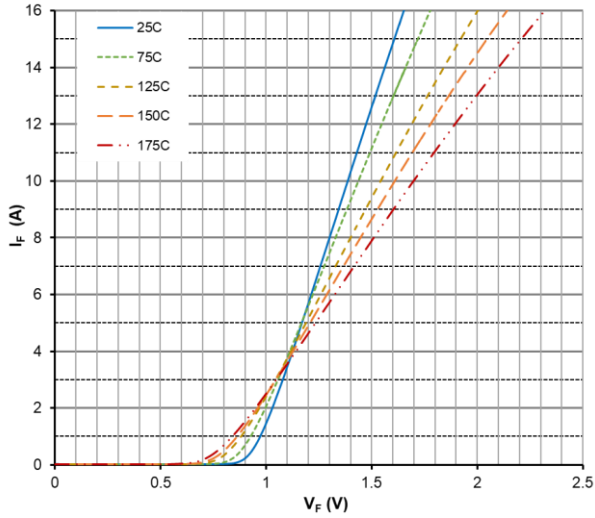


Figure 1. Forward Characteristics

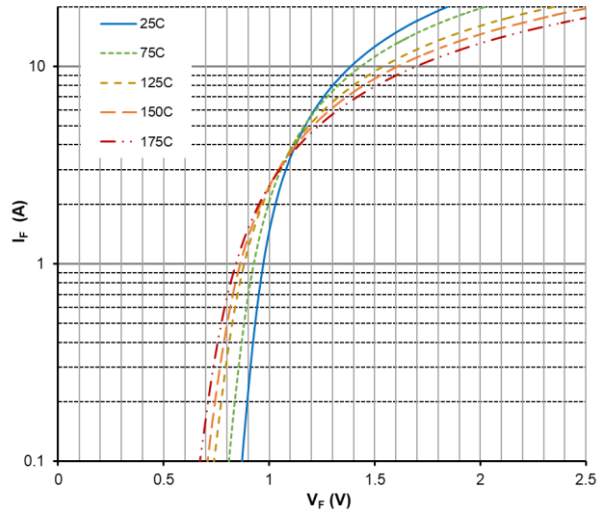


Figure 2. Forward Characteristics

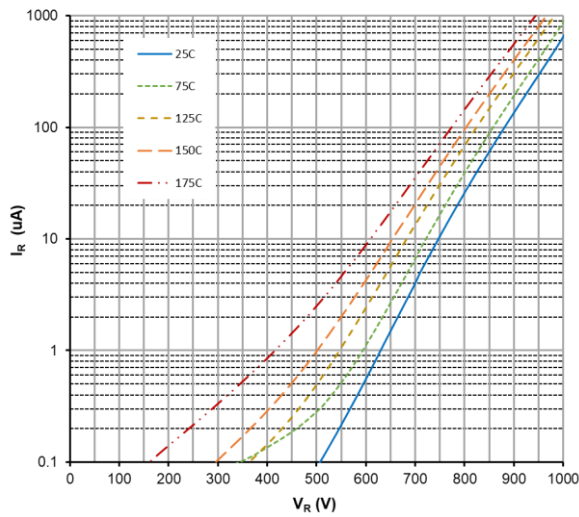


Figure 3. Reverse Characteristics

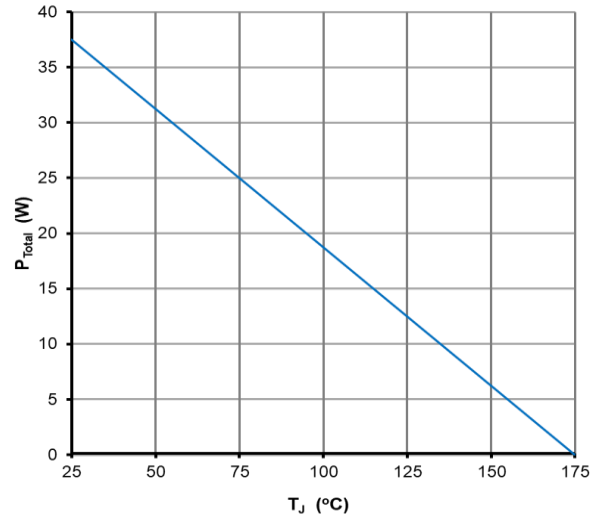


Figure 4. Power Derating

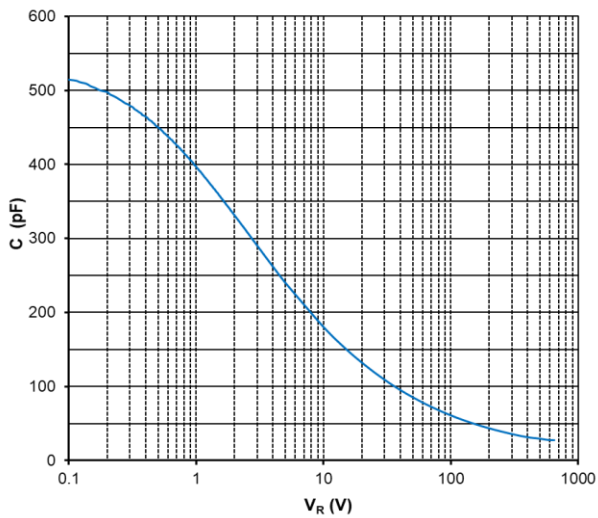


Figure 5. Capacitance vs Reverse Voltage

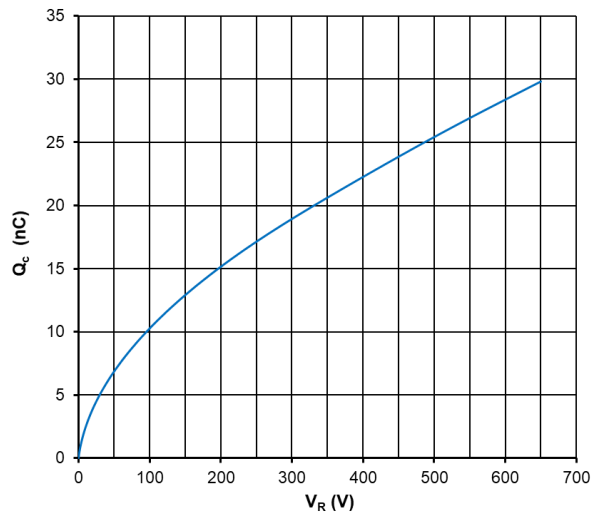
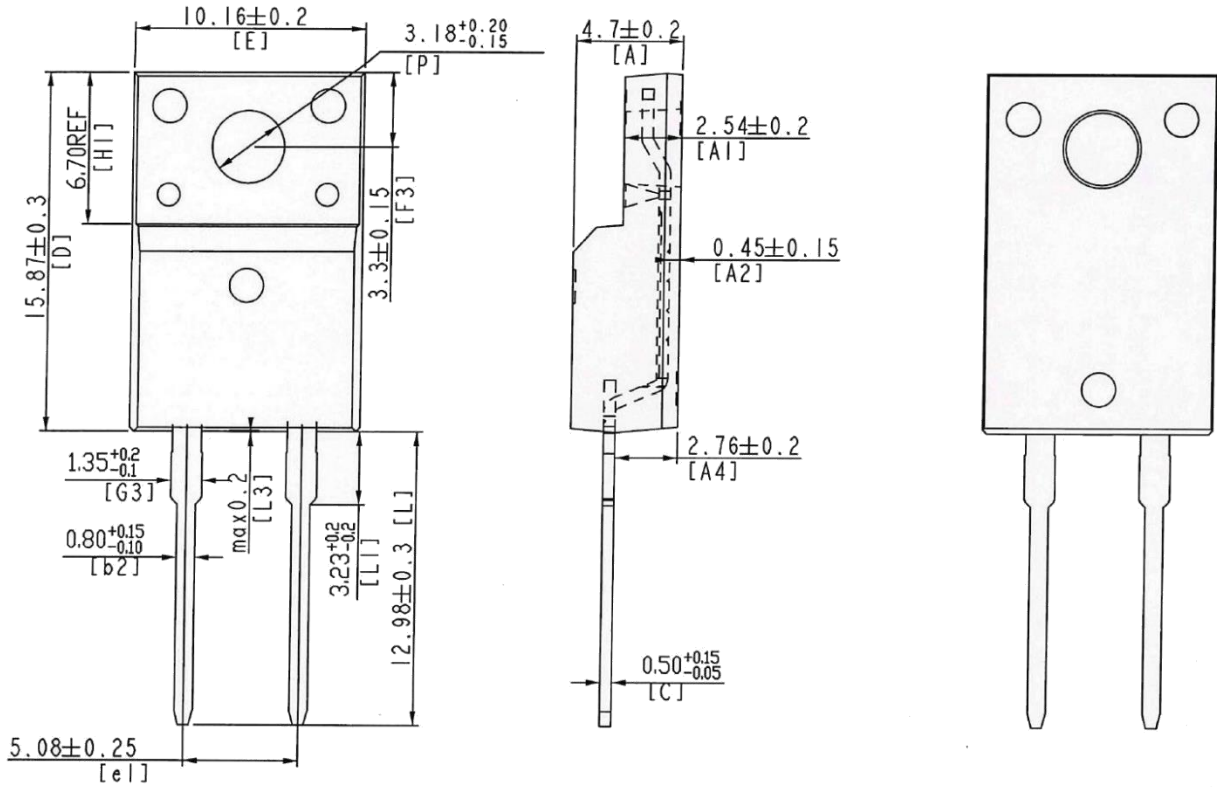


Figure 6. Recovery Charge vs Reverse Voltage



Package Dimensions

(TO-220-2 FullPAK)



Part Number	Package	Packing	Marking
LGE3D10065AF	TO-220-2 FullPAK	50pcs / Tube	LGE3D10065AF