



$V_R = 650\text{ V}$ $I_F = 30\text{ A (}T_C=150^\circ\text{C)}$ $Q_C = 68\text{ nC (}V_R=400\text{ V)}$
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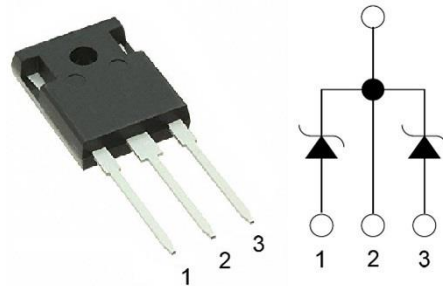
## Features

- Zero Forward/Reverse Recovery Current
- High Blocking Voltage
- High Frequency Operation
- Positive Temperature Coefficient on  $V_F$
- Temperature Independent Switching Behavior

## Benefits

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

### TO-247-3



## Applications

- Servo Drives
- Solar Inverters
- AC/DC converters
- DC/DC converters
- Uninterruptable power supplies

## 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 (per leg / per device)	$I_F$	$T_C=25^\circ\text{C}$ $T_C=135^\circ\text{C}$ $T_C=150^\circ\text{C}$	40/80 20/40 15/30	A
Non repetitive Forward Surge Current *	$I_{FSM}$	$T_C = 25^\circ\text{C}$ , $t_p=10\text{ ms}$ , Half Sine Pulse $T_C = 110^\circ\text{C}$ , $t_p=10\text{ ms}$ , Half Sine Pulse $T_C = 25^\circ\text{C}$ , $t_p=10\text{ us}$ , Pulse	90 80 500	A
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 $T_C = 110^\circ\text{C}$ , $t_p=10\text{ ms}$ , Freq = 0.1Hz, 100 cycles, Half Sine Pulse	80 70	A
Total power dissipation (per leg / per device)	$P_D$	$T_C=25^\circ\text{C}$	188/376	W
Operating Junction Temperature	$T_J$		-55 to 175	$^\circ\text{C}$
Storage Temperature	$T_{STG}$		-55 to 175	$^\circ\text{C}$

Note : \* Per leg \*\* Per device



LGE

**LGE3D30065D**  
Silicon Carbide SchottkyDiode



**Electrical Characteristics**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
DC Blocking Voltage *	$V_{DC}$	$T_J = 25^{\circ}C$	650			V
Forward Voltage *	$V_F$	$I_F = 15A, T_J = 25^{\circ}C$		1.4	1.75	V
		$I_F = 15A, T_J = 125^{\circ}C$		1.55		
		$I_F = 15A, T_J = 175^{\circ}C$		1.7		V
Reverse Current *	$I_R$	$V_R = 650V, T_J = 25^{\circ}C$		2	80	$\mu A$
		$V_R = 650V, T_J = 125^{\circ}C$		8		$\mu A$
		$V_R = 650V, T_J = 175^{\circ}C$		25		$\mu A$
Total Capacitive Charge *	$Q_C$	$V_R = 400V, T_J = 25^{\circ}C$		34		nC
Total Capacitance *	C	$V_R = 1V, T_J = 25^{\circ}C,$ Freq = 1MHz		570		pF
		$V_R = 200V, T_J = 25^{\circ}C,$ Freq = 1MHz		65		
		$V_R = 400V, T_J = 25^{\circ}C,$ Freq = 1MHz		51		

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 (per device)	$R_{th(j-c)}$	junction-case		0.4		$^{\circ}C/W$

Note : \* Per leg \*\* Per device

**Typical Electrical Curves (Per Leg)**

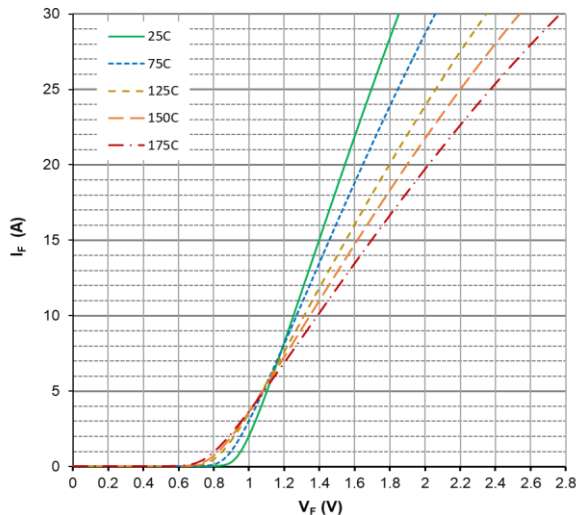


Figure 1. Forward Characteristics

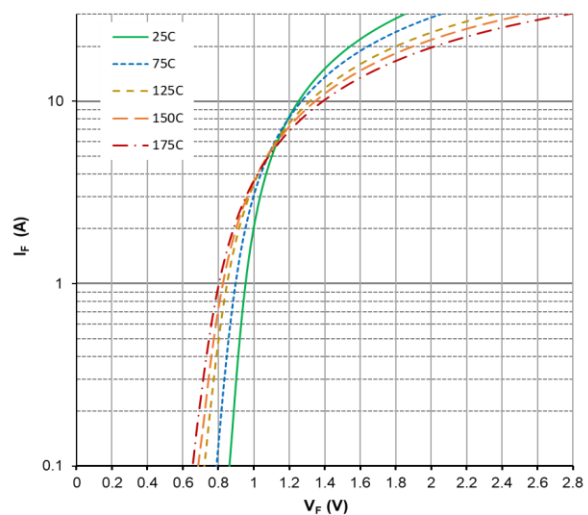


Figure 2. Forward Characteristics



# LGE3D30065D

## Silicon Carbide SchottkyDiode



### Typical Electrical Curves (Per Leg)

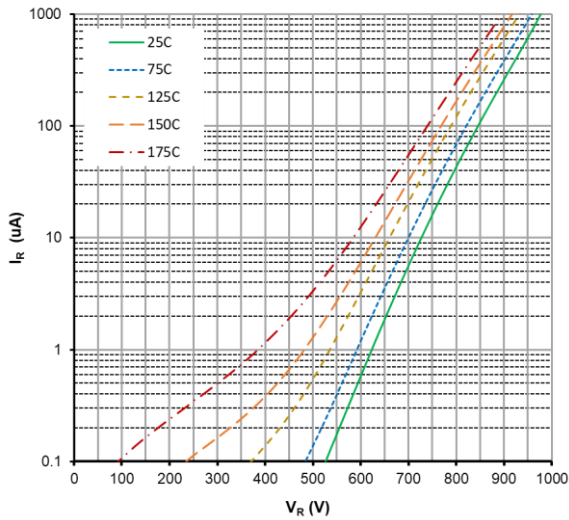


Figure 3. Reverse Characteristics

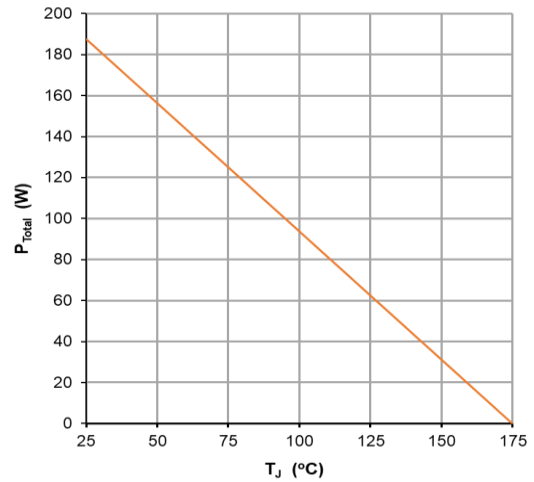


Figure 4. Power Derating

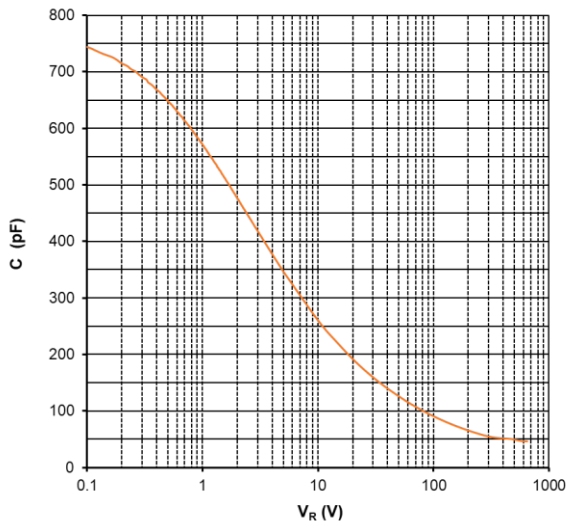


Figure 5. Capacitance vs Reverse Voltage

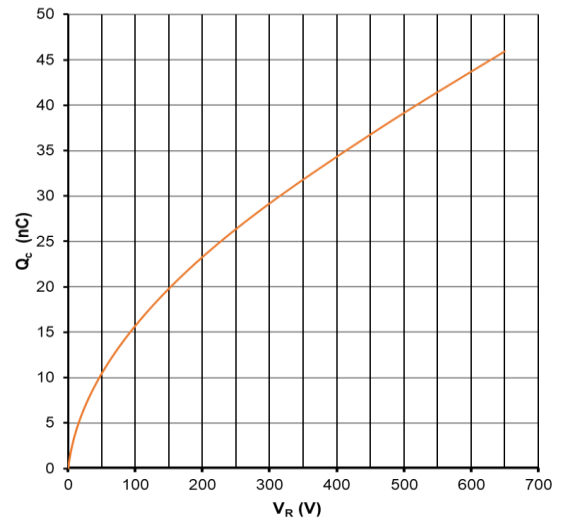


Figure 6. Recovery Charge vs Reverse Voltage



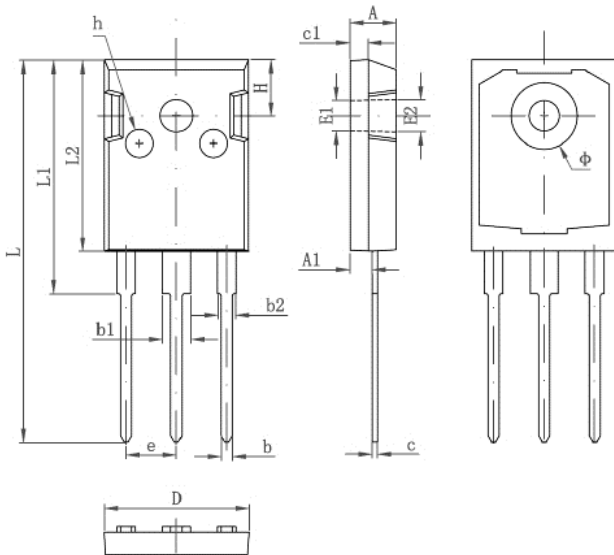
# LGE3D30065D

## Silicon Carbide SchottkyDiode



### Package Dimensions

(TO-247-3 Package)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.850	5.150	0.191	0.200
A1	2.200	2.600	0.087	0.102
b	1.000	1.400	0.039	0.055
b1	2.800	3.200	0.110	0.126
b2	1.800	2.200	0.071	0.087
c	0.500	0.700	0.020	0.028
c1	1.900	2.100	0.075	0.083
D	15.450	15.750	0.608	0.620
E1	3.500 REF		0.138 REF	
E2	3.600 REF		0.142 REF	
L	40.900	41.300	1.610	1.626
L1	24.800	25.100	0.976	0.988
L2	20.300	20.600	0.799	0.811
Φ	7.100	7.300	0.280	0.287
e	5.450 TYP		0.215 TYP	
H	5.980 REF		0.235 REF	
h	0.000	0.300	0.000	0.012

Package	Packing	Box Size L×W×H(mm)	Quantity(pcs/box)	Carton Size L×W×H(mm)	Quantity(pcs/carton)
TO-247	30pcs/Tube	570×155×50	450	580×340×125	1800