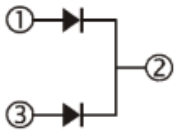
Silicon Carbide Schottky Barrier Diode

V_{RRM}	650 V	I_F	2 x 10 A
$V_{F(Typ.)}$	1.5 V	Q_C	24 nC

TO-247AD-3LD



Features

- Temperature Independent Switching Behavior
- High Surge Current Capability
- Low Conduction Loss
- Zero Reverse Recovery
- High junction temperature 175 °C
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case: TO-247AD-3LD molded plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.2198 ounces, 6.231 grams

Application

- PFC, UPS, PV Inverter, EV Charging Station, Welder

Maximum Ratings and Thermal Characteristics (T_C = 25 °C unless otherwise specified)

PARAMETER		SYMBOL	LIMIT	UNITS
Repetitive Peak Reverse Voltage		V_{RRM}	650	V
DC Blocking Voltage		V_{DC}	650	V
Continuous Forward Current (Per Leg/Device)	T_C= 145 °C	I_F	10 / 20	A
Repetitive Peak Surge Current *Half Sine Wave, D=0.1* (Per Leg)	T_C= 25 °C , t_p =10ms T_C=125 °C , t_p =10ms	I_{FRM}	44 40	A
Peak Forward Surge Current *Half Sine Wave* (Per Leg)	T_C= 25 °C , t_p =10ms T_C=125 °C , t_p =10ms	I_{FSM}	48 44	A
Peak Forward Surge Current t_p *=10us, Pulse* (Per Leg)			640	A
Maximum Power Dissipation (Per Leg)		P_{total}	98	W
Operating Junction Temperature Range		T_J	-55~175	°C
Storage Temperature Range		T_{STG}	-55~175	°C

Electrical Characteristics (Per Leg) (T_C = 25 °C unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Forward Voltage Drop	V_F	I_F = 10 A, T_J = 25 °C	-	1.5	1.7	V
		I_F = 10 A, T_J = 175 °C	-	1.8	-	
Reverse Leakage Current	I_R	V_R = 650 V, T_J = 25 °C	-	1.6	70	μA
		V_R = 650 V, T_J = 175 °C	-	0.018	-	mA
Total Capacitive Charge	Q_C	I_F = 10 A, V_R = 400V	-	24	-	nC
Total Capacitance	C	V_R = 1V, f = 1MHz	-	379	-	pF
		V_R = 200V, f = 1MHz	-	45	-	pF
		V_R = 400V, f = 1MHz	-	33	-	pF
Capacitance Stored Energy	E_C	V_R = 400V	-	3.8	-	μJ
Thermal Resistance	$R_{\theta JC}$		-	1.53	-	°C/W

TYPICAL CHARACTERISTIC CURVES (Per Leg)

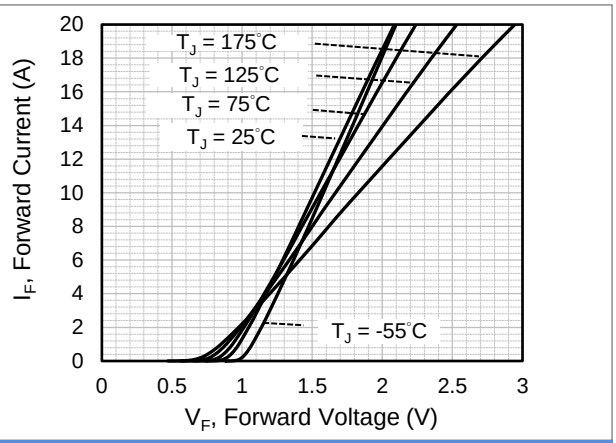


Fig.1 Forward Characteristics

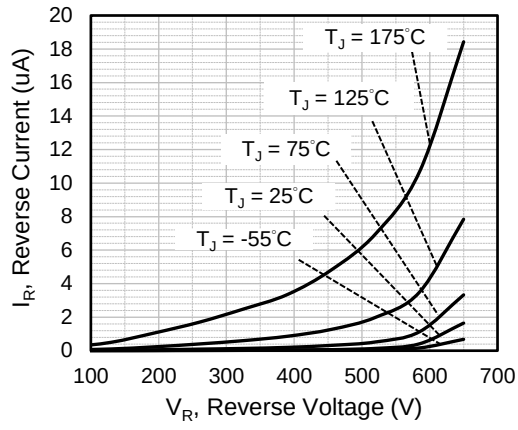


Fig.2 Reverse Characteristics

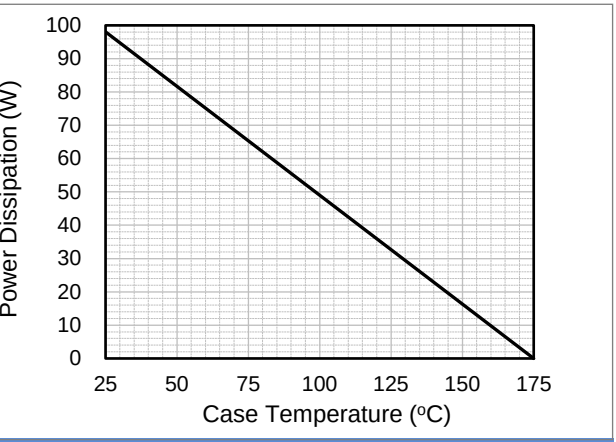


Fig.3 Power Derating Curve

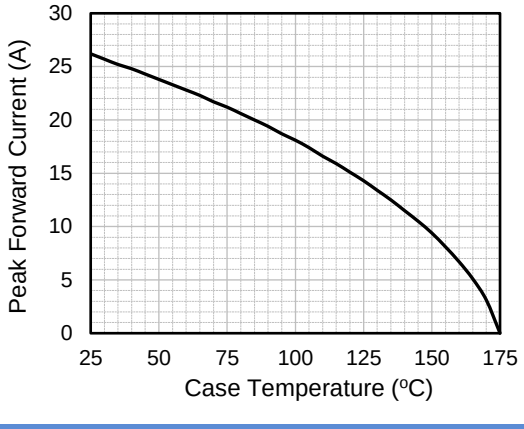


Fig.4 Current Derating Curve

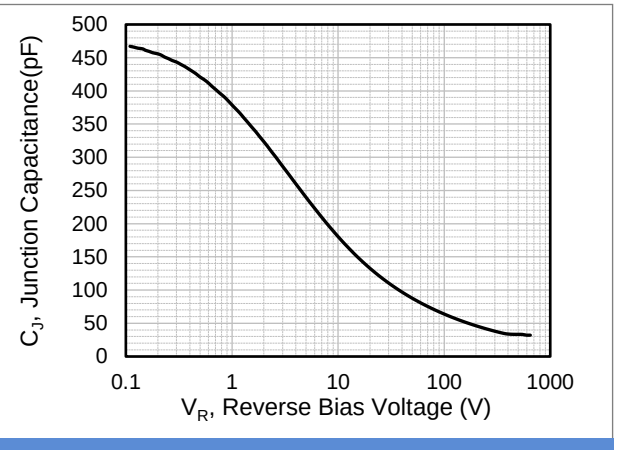


Fig.5 Typical Junction Capacitance

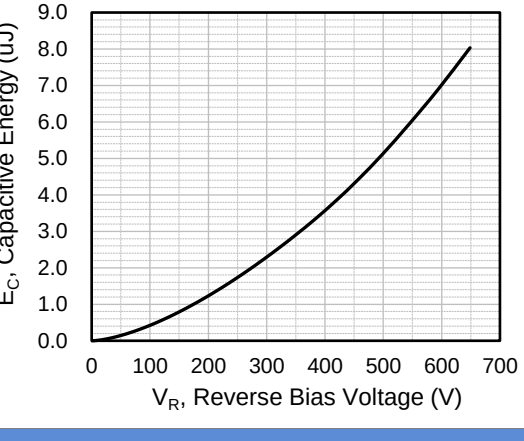


Fig.6 Capacitance Stored Energy

Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PCDH2065CCG1	TO-247AD-3LD	30pcs / Tube	CDH2065CCG1

Packaging Information

TO-247AD-3LD Dimension — Unit: inch(mm)