

Product Summary

H4D065Y008L

Part Number	Package	Marking
H4D065Y008L	PDFN-8x8	H4D065Y008L

V_R	650V
$I_{F(100/121^\circ\text{C})}$	10A/8A
Q_C	13nC



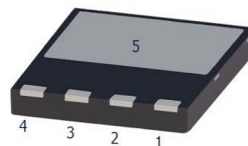
Features

- Low Conduction and Switching Loss
- Zero Reverse Recovery
- Temperature Independent Switching Behavior
- Positive Temperature Coefficient Device
- High Surge Current Capability
- RoHS Compliant and Halogen Free
- Suitable for High-Speed Applications

Benefits

- Higher System Efficiency
- Increase Parallel Device Convenience
- Enable High Temperature Application
- Allow High Frequency Operation
- Realize Compact and Lightweight Systems
- High Reliability

Circuit Diagram



*Floating (1, 2)

Applications

- Switching Mode Power Supply
- PFC
- UPS
- Flywheel diode in Power Inverters
- Solar Inverters

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

Parameter	Symbol	Test Conditions	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	$T_J = 25^\circ\text{C}$	650	V
Peak Reverse Surge Voltage	V_{RSM}	$T_J = 25^\circ\text{C}$	650	V
DC Blocking Voltage	V_R	$T_J = 25^\circ\text{C}$	650	V
Continuous Forward Current	I_F	$T_C = 25^\circ\text{C}$	15*	A
		$T_C = 100^\circ\text{C}$	10*	
		$T_C = 121^\circ\text{C}$	8*	
Non-Repetitive Peak Forward Surge Current	I_{FSM}	$T_C = 25^\circ\text{C}$, $T_P = 10$ ms, Half Sine Wave	46*	A
		$T_C = 125^\circ\text{C}$, $T_P = 10$ ms, Half Sine Wave	41*	
		$T_C = 25^\circ\text{C}$, $T_P = 10$ μs , Pulse	271*	
Repetitive Peak Forward Surge Current	I_{FRM}	$T_C = 25^\circ\text{C}$, $T_P = 10$ ms Half Sine Wave, $D = 0.1$	40*	A
		$T_C = 125^\circ\text{C}$, $T_P = 10$ ms Half Sine Wave, $D = 0.1$	35*	
Power Dissipation	P_D	$T_C = 25^\circ\text{C}$	42*	W
		$T_C = 125^\circ\text{C}$	14*	
I^2t value	$\int i^2 dt$	$T_C = 25^\circ\text{C}$, $T_P = 10$ ms	10*	A^2s
Junction & Storage Temperature	T_J, T_{stg}		-55 to 175	$^\circ\text{C}$
Soldering Temperature	T_L		260	

Electrical Characteristics ($T_c = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
DC Blocking Voltage	V_{DC}	$I_R = 100 \mu\text{A}$, $T_J = 25^\circ\text{C}$	> 650			V
Forward Voltage	V_F	$I_F = 8\text{A}$, $T_J = 25^\circ\text{C}$		1.55	1.8	V
		$I_F = 8\text{A}$, $T_J = 175^\circ\text{C}$		1.9	2.1	V
Reverse Current	I_R	$V_R = 650\text{V}$, $T_J = 25^\circ\text{C}$		1.5	60	μA
		$V_R = 650\text{V}$, $T_J = 175^\circ\text{C}$		16	240	μA
Total Capacitive Charge	Q_C	$I_F = 8\text{A}$, $di/dt = 300\text{A}/\mu\text{s}$, $V_R = 400\text{V}$, $T_J = 25^\circ\text{C}$		13*		nC
Total Capacitance	C_j	$V_R = 1\text{V}$, $T_J = 25^\circ\text{C}$, $f = 1\text{ MHz}$		249*		pF
		$V_R = 200\text{V}$, $T_J = 25^\circ\text{C}$, $f = 1\text{ MHz}$		28*		
		$V_R = 400\text{V}$, $T_J = 25^\circ\text{C}$, $f = 1\text{ MHz}$		26*		
Capacitance Stored Energy	E_C	$V_R = 400\text{V}$		2.5*		μJ

Thermal Resistance

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance, Junction to Case	$R_{\theta,JC}$		3.5*		$^\circ\text{C}/\text{W}$

*By estimation.

Naming Rule

H4 D 065 Y 008 L

Generation

H3 = Gen 3rd Discrete

Device Type

M = MOSFET J = JMOS S = JBS diode

Breakdown Voltage

065 = 650V 120 = 1200V 170 = 1700V

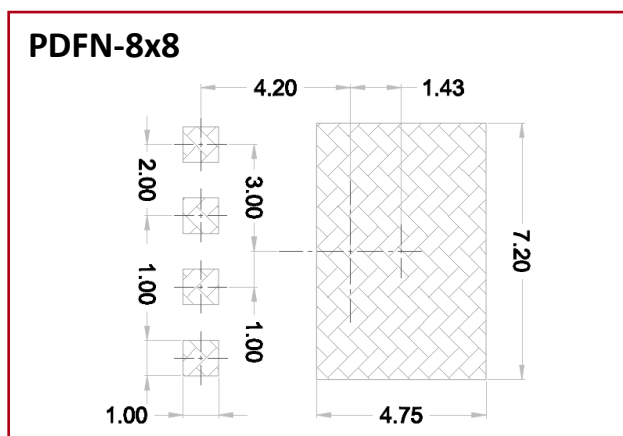
Package

A = TO-220-2L Y = DFN/QFN Pack (L=8*8mm, X=10*10mm)

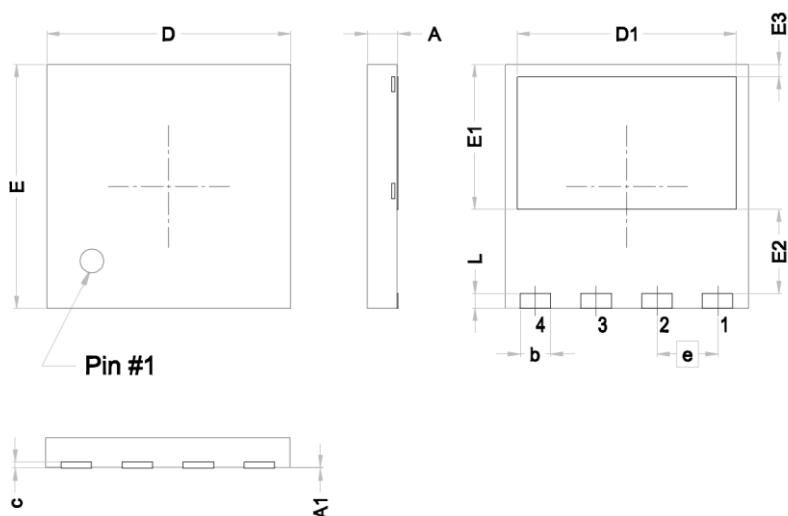
Typical Current Rating

002 = 2A 004 = 4A 006 = 6A 008 = 8A 010 = 10A 015 = 15A

Recommended Solder Pad Layout



Package Dimensions



Symbol	mm		
	Min.	Typ.	Max.
A	0.90	1.00	1.10
A1	0.00	-	0.05
b	0.90	1.00	1.10
c	0.10	0.20	0.30
D	7.90	8.00	8.10
D1	7.10	7.20	7.30
E	7.90	8.00	8.10
E1	4.65	4.75	4.85
E2	2.65	2.75	2.85
E3	0.30	0.40	0.50
e	2.00 BSC		
L	0.40	0.50	0.60

Note:

1. All dimensions are in mm.
2. Dimensions are not inclusive burrs and mold flash.