



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



## HDC Series

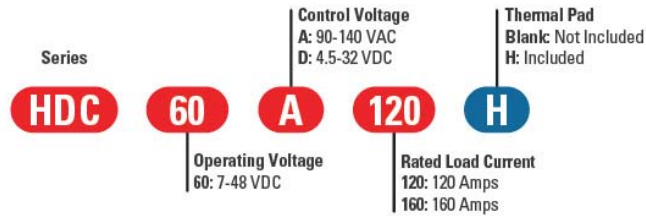


- Ratings of 120A and 160A @ 48VDC
- LED Status Indicator
- Heavy Duty Stud Terminals
- AC or DC control
- $\mu$ S Turn-On and Off times
- Low On-State Voltage Drop
- PWM to 1K Hz

### PRODUCT SELECTION

Control Voltage	120A	160A
4.5-32 Vdc	HDC60D120	HDC60D160
90-140 Vac	HDC60A120	HDC60A160

### AVAILABLE OPTIONS



### OUTPUT SPECIFICATIONS (1)

Description	120A	160A
Operating Voltage [Vdc]	7-48	7-48
Blocking Voltage [Vdc]	60	60
Rated Load Current [Arms] (2)	120	160
Minimum Load Current [mA]	2.5	2.5
Maximum Surge Current (10ms) [Adc]	360	470
Maximum Off-State Leakage Current @ Rated Voltage [mA]	0.1	0.1
Maximum On-State Voltage Drop @ Rated Current [Vdc]	0.53	0.56
Thermal Resistance Junction to Case (Rjc) [°C/W]	0.42	0.36
Maximum On-State Resistance @ Rated Current (RDS-ON) [mOhms]	4.32	3.5
Wire Size max (solid/stranded) [AWG/ IEC mm <sup>2</sup> ]	2/0 / 67.4	2/0 / 67.4
Output Terminal Nut Torque Range [in lb (Nm)]	225-300 (25.4-33.9)	225-300 (25.4-33.9)
Maximum PWM (Hz) (3)	1000	1000



## INPUT SPECIFICATIONS (1)

Description	HDC60Dxxx	HDC60Axxx
Control Voltage Range	4.5-32 Vdc	90-140 VAC
Must Turn-Off Voltage	4.2 VDC	35 VAC
Minimum Input Current @ Minimum Voltage (for on-state)	23 mA	31 mA
Maximum Input Current @ Maximum Voltage	45 mA	33 mA
Nominal Input Impedance	Current Regulated	Current Regulated
Maximum Turn-On Time at min voltage	90.5 $\mu$ s	6 ms
Maximum Turn-On Time at max voltage	8.5 $\mu$ s	4 ms
Maximum Turn-Off Time at min voltage	145 $\mu$ s	9.2 ms
Maximum Turn-Off Time at max voltage	330 $\mu$ s	9.2 ms
LED Status Indicator (Color)	Green	Green
Terminal Type / size in (mm)	QC / 0.187 (4.75)	QC / 0.187 (4.75)

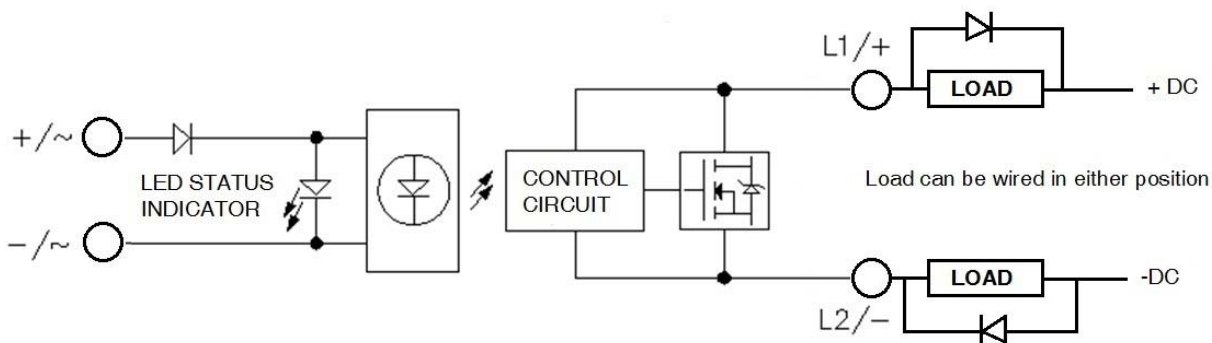
## GENERAL SPECIFICATIONS

Description	Parameters
Dielectric Strength, Input/Output/Base (50/60Hz)	2500 Vrms
Minimum Insulation Resistance (@ 500 V DC)	$10^{10}$ Ohm
Maximum Capacitance, Input/Output	10 pF
Ambient Operating Temperature Range	-30 to 80 °C
Ambient Storage Temperature Range	-40 to 125 °C
Maximum Humidity	85% non-condensing
Weight (typical) lbs/grams	0.75/340.2
Housing Material	PBT 30% GF, UL 94 V-0
SSR Mounting Torque Range [in lbs/Nm]	18-20 (2-2.2)
Baseplate Material	Aluminum
Encapsulation	Thermal Conductive Epoxy
RoHS Exemption #'s	None

## GENERAL NOTES

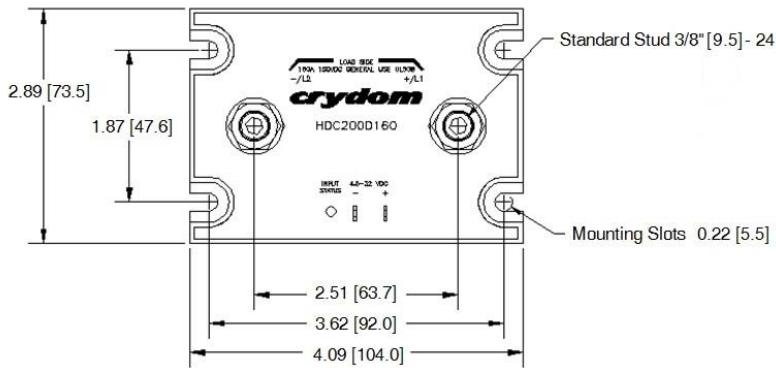
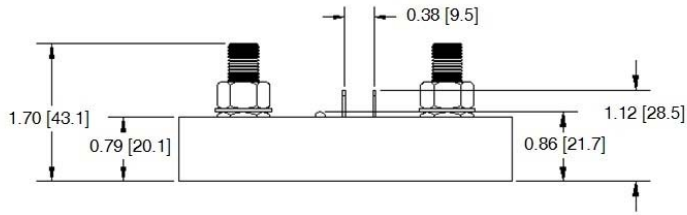
- 1) All parameters at 40°C unless otherwise specified.
- 2) Heat sinking required, see derating curves.
- 3) See PWM Derating Chart.

## WIRING DIAGRAM



**NOTE:** Inductive loads must be diode suppressed to prevent damage to SSR

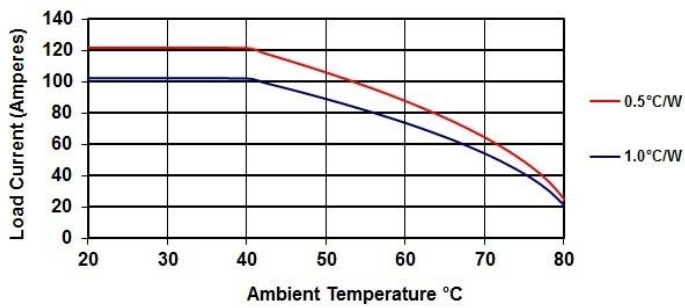
## MECHANICAL SPECIFICATIONS



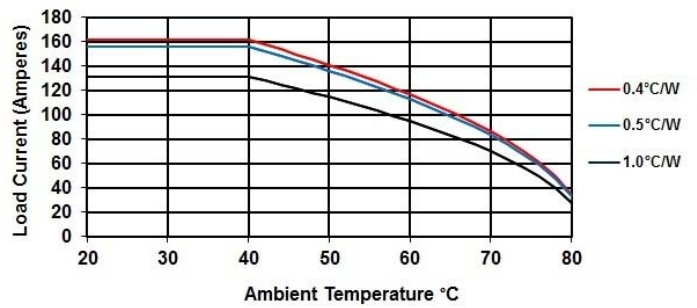
All dimensions are in inches [millimeters]

## THERMAL DERATE INFORMATION

Derating Curve: HDC060x120

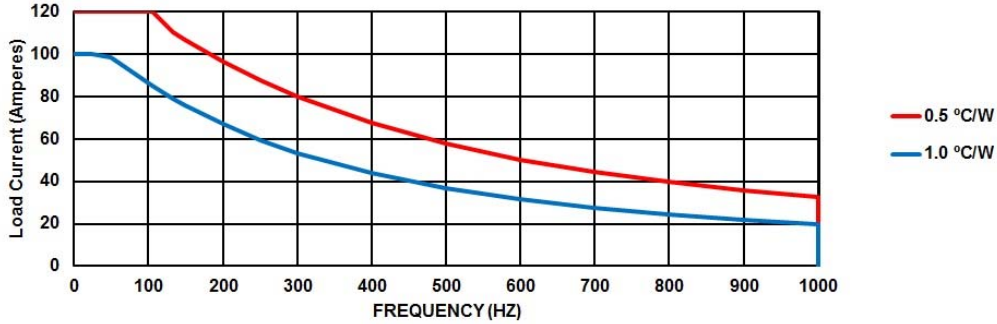


Derating Curve: HDC060x160

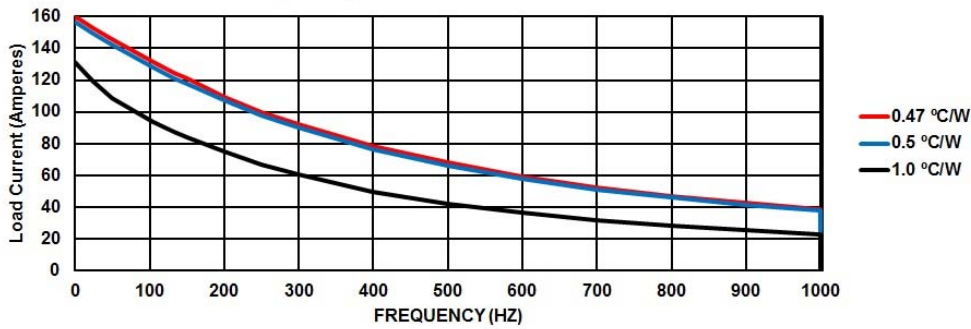


**PWM DERATE INFORMATION**

**PWM frequency vs. Load Current HDC60D120**



**PWM frequency vs. Load Current HDC60D160**



**AGENCY APPROVALS**

Designed in accordance with the requirements of IEC 62314

- IEC 61000-4-2 : Electrostatic Discharge: Level 3 (Criteria A)
- IEC 61000-4-4 : Electrically Fast Transients: Level 3 (Criteria A)
- IEC 61000-4-5 : Electrical Surges: Level 3 (Criteria A)



Rev. 072312

**ACCESSORIES**

**Compatible Accessories**

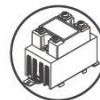
- Hardware Kits (HK1)
- Thermal Pads (HSP-3, HSP-5)




HS103/  
HS103DR




HS053



SSR/Heat sink  
Assemblies  
Available

 <b>DANGER / PELIGRO / DANGER /GEFAHR / PERICOLO / PERIGO</b>					
<p><b>HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH.</b></p> <ul style="list-style-type: none"> <li>• Disconnect all power before installing or working with this equipment.</li> <li>• Verify all connections and replace all covers before turning on power.</li> </ul> <p><b>Failure to follow these instructions will result in death or serious injury.</b></p>	<p><b>RIESGO DE DESCARGA ELECTRICA O EXPLOSION.</b></p> <ul style="list-style-type: none"> <li>• Desconectar todos los suministros de energia a este equipo antes de trabajar con este equipo.</li> <li>• Verificar todas las conexiones y colocar todas las tapas antes de energizar el equipo.</li> </ul> <p><b>El incumplimiento de estas instrucciones puede provocar la muerte o lesiones serias.</b></p>	<p><b>RISQUE DE DESCARGE ELECTRIQUE OU EXPLOSION</b></p> <ul style="list-style-type: none"> <li>• Eteindre toutes les sources d'énergie de cet appareil avant de travailler dessus de cet appareil</li> <li>• Vérifier tous connections, et remettre tous couverts en place avant de mettre sous</li> </ul> <p><b>De non-suivi de ces instructions provoquera la mort ou des lésions sérieuses sérieuses.</b></p>	<p><b>GEFAHR EINES ELEKTRISCHE N SCHLAGES ODER EINER EXPLOSION.</b></p> <ul style="list-style-type: none"> <li>• Stellen Sie jeglichen Strom ab, der dieses Gerät versorgt, bevor Sie an dem Gerät Arbeiten durchführen</li> <li>• Vor der Inbetriebnahme alle Anschlüsse überprüfen und alle Gehäuseteile montieren.</li> </ul> <p><b>Unterlassung dieser Anweisungen können zum Tode oder zu schweren Verletzungen führen.</b></p>	<p><b>RISCHIO DI SCOSSA ELETTRICA O DELL'ESPLOSIONE.</b></p> <ul style="list-style-type: none"> <li>• Spenga tutta l'alimentazion e che fornisce questa apparecchiatura prima del lavorare a questa apparecchiatura</li> <li>• Verificare tutti i collegamenti e sostituire tutte le coperture prima della rotazione sull'alimentazione</li> </ul> <p><b>L'omissione di seguire queste istruzioni provocherà la morte o di lesioni serie</b></p>	<p><b>RISCO DE DESCARGA ELÉTRICA OU EXPLOÇÃO</b></p> <ul style="list-style-type: none"> <li>• Desconectar o equipamento de toda a energia antes de instalar ou trabalhar com este equipamento</li> <li>• Verificar todas as conexões e recolocar todas as tampas antes de religar o equipamento</li> </ul> <p><b>O não cumprimento destas instruções pode levar à morte ou lesões sérias.</b></p>

 <b>WARNING / AVERTISSEMENT / WARNUNG /ADVERTENCIA / AVVERTENZA / AVISO</b>		
<p><b>RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE</b></p> <ul style="list-style-type: none"> <li>• The product's side panels may be hot, allow the product to cool before touching.</li> <li>• Follow proper mounting instructions including torque values.</li> <li>• Do not allow liquids or foreign objects to enter this product.</li> </ul> <p><b>Failure to follow these instructions can result in serious injury, or equipment damage.</b></p>	<p><b>RISQUE DE DOMMAGE MATERIEL ET DE SURCHAUFFE DU BOITIER</b></p> <ul style="list-style-type: none"> <li>• Les panneaux latéraux du produit peuvent être chauds. Laissez le produit refroidir avant de le toucher.</li> <li>• Respecter les consignes de montage, et notamment les couples de serrage.</li> <li>• Ne pas laisser pénétrer de liquide ni de corps étrangers à l'intérieur du produit.</li> </ul> <p><b>Le non-respect de cette directive peut entraîner, des lésions corporelles graves ou des dommages matériels.</b></p>	<p><b>GEFAHR VON MATERIALSCHÄDEN UND GEHÄUSEERHITZUNG</b></p> <ul style="list-style-type: none"> <li>• Die Seitenwände können heiß sein. Lassen Sie das Produkt abkühlen, bevor Sie es berühren.</li> <li>• Beachten Sie die Montageanweisungen,</li> <li>• Führen Sie keine Flüssigkeiten oder Fremdkörper in das Produkt ein.</li> </ul> <p><b>Die Nichtbeachtung dieser Anweisung kann Körperverletzung oder Materialschäden zur Folge haben.</b></p>
<p><b>RIESGO DE DAÑOS MATERIALES Y DE SOBRECIENTAMIENTO DE LA UNIDAD</b></p> <ul style="list-style-type: none"> <li>• Los paneles laterales del producto pueden estar calientes. Esperar que el producto se enfríe antes de tocarlo.</li> <li>• Respetar las instrucciones de montaje, y en particular los pares de apretado.</li> <li>• No dejar que penetren líquidos o cuerpos extraños en el producto.</li> </ul> <p><b>Si no se respetan estas precauciones pueden producirse graves lesiones, daños materiales.</b></p>	<p><b>RISCHIO DI DANNI MATERIALI E D'INVOLUCRO CALDO</b></p> <ul style="list-style-type: none"> <li>• I pannelli laterali dell'apparecchio possono scottare; lasciar quindi raffreddare il prodotto prima di toccarlo.</li> <li>• Seguire le istruzioni di montaggio corrette.</li> <li>• Non far entrare liquidi o oggetti estranei in questo apparecchio.</li> </ul> <p><b>La mancata osservanza di questa precauzione può causare gravi rischi per l'incolumità personale o danni alle apparecchiature.</b></p>	<p><b>RISCO DE DANO MATERIAL E DE AQUECIMENTO</b></p> <ul style="list-style-type: none"> <li>• Os painéis laterais do produto podem estar quentes; dê tempo ao produto para arrefecer antes de lhe tocar.</li> <li>• Siga devidamente as instruções de montagem.</li> <li>• Não permita a entrada de líquidos e de objectos estranhos no produto.</li> </ul> <p><b>A não observância destas precauções pode provocar a morte, ferimentos graves ou danos materiais.</b></p>



**ANNEX - ENVIROMENTAL INFORMATION**

The environmental information disclosed in this annex including the EIP Pollution logo are in compliance with People's Republic of China Electronic Industry Standard SJ/T11364 – 2006, Marking for Control of Pollution Caused by Electronic Information Products.

Part Name	Toxic or hazardous Substance and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr (VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Semiconductor die	X	0	0	0	0	0
Solder	X	0	0	0	0	0

此附件所标示的包括电子信息产品污染图标的环保信息符合中华人民共和国电子行业标准 **SJ/T11364 - 2006**, 电子信息产品污染控制标识要求



部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
半导体芯片	X	0	0	0	0	0
焊接点	X	0	0	0	0	0