

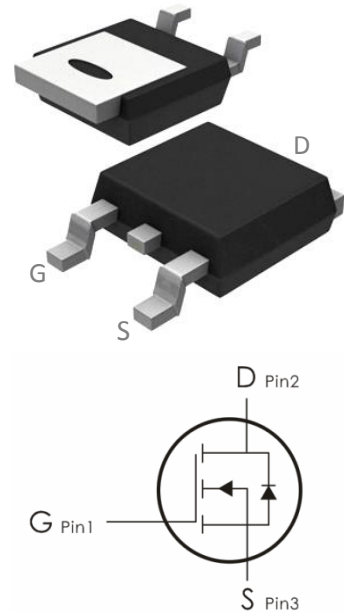
Description:

This N-Channel MOSFET uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.

Features:

- 1) $V_{DS}=100V, I_D=11.3A, R_{DS(on)} < 120m\Omega @ V_{GS}=10V$
- 2) Low gate charge.
- 3) Green device available.
- 4) Advanced high cell density trench technology for ultra low $R_{DS(on)}$.
- 5) Excellent package for good heat dissipation.



Absolute Maximum Ratings: ($T_C=25^\circ C$ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current- $T_C=25^\circ C^G$	11.3	A
	Continuous Drain Current- $T_C=70^\circ C$	9	
I_{DM}	Pulsed Drain Current	45.4	A
P_D	Power Dissipation, $T_C=25^\circ C$	29.9	W
	Power Dissipation, $T_C=70^\circ C$	19.1	
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	$^\circ C$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case	4.17	$^\circ C/W$

Package Marking and Ordering Information:

Part NO.	Marking	Package
DH120NG	H120N	TO-252

Electrical Characteristics: ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
V _{(BR)DSS}	Drain-Sourctce Breakdown Voltage	V _{GS} =0V, I _D =250 μ A	100	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} =0V, V _{DS} =100V	---	---	1	μ A
I _{GSS}	Gate-Source Leakage Current	V _{GS} =± 20V, V _{DS} =0A	---	---	± 100	nA
On Characteristics						
V _{GS(th)}	GATE-Source Threshold Voltage	V _{GS} =V _{DS} , I _D =250 μ A	1.22	---	2.4	V
R _{DS(ON)}	Drain-Source On Resistance ^a	V _{GS} =10V, I _D =8A	---	---	120	m Ω
		V _{GS} =4.5V, I _D =4A	---	---	140	m Ω
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz	---	500	---	pF
C _{oss}	Output Capacitance		---	48	---	
C _{rss}	Reverse Transfer Capacitance		---	27	---	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time	V _{DD} =30V, R _L =15Ω V _{GS} =10V, R _{GEN} =2.5Ω	---	12.4	---	ns
t _r	Rise Time		---	12	---	ns
t _{d(off)}	Turn-Off Delay Time		---	27.3	---	ns
t _f	Fall Time		---	2.6	---	ns
Q _g	Total Gate Charge	V _{DS} =30V, V _{GS} =10V, I _D =3A	---	16.8	---	nC
Q _{gs}	Gate-Source Charge		---	5	---	nC
Q _{gd}	Gate-Drain Charge		---	4	---	nC
Drain-Source Diode Characteristics						
V _{SD}	Source-Drain Diode Forward Voltage	I _S =1A, V _{GS} =0V	---	---	1.1	V

Notes:

Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$, Guaranteed by design, not subject to production testing.

Typical Characteristics: ($T_J=25^{\circ}\text{C}$ unless otherwise noted)

