



N-CHANNEL ENHANCEMENT MODE MOSFET

Product Summary

BV _{DSS}	R _{DS(ON)}	I _D T _C = +25°C	
950V	$2.2\Omega@V_{GS} = 10V$	6A	

Description

This new generation complementary dual MOSFET features low onresistance and fast switching, making it ideal for high efficiency power management applications.

Applications

- Motor Control
- Backlighting
- DC-DC Converters
- Power Management Functions

Features

- Low Input Capacitance
- High BV_{DSS} Rating for Power Application
- Low Input/Output Leakage
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)

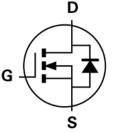
Mechanical Data

- Case: ITO220AB (Type TH)
- Case Material: Molded Plastic, "Green" Molding Compound, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish Annealed over Copper Leadframe.
 Solderable per MIL-STD-202, Method 208 [®]
- Terminal Connections: See Diagram Below
- Weight: 1.85 grams (Approximate)

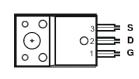
ITO220AB (Type TH)







Equivalent Circuit



Top View Pin Out Configuration

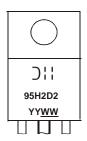
Ordering Information (Note 4)

Part Number	Case	Packaging
DMN95H2D2HCTI	ITO220AB (Type TH)	50 pieces/tube

Notes: 1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.

- See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
- 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- 4. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information



Oll = Manufacturer's Marking
95H2D2 = Product Type Marking Code
YYWW = Date Code Marking
YY or YY = Last Two Digits of Year (ex: 17 = 2017)
WW or WW = Week Code (01 to 53)



Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic			Value	Unit
Drain-Source Voltage		V_{DSS}	950	V
Gate-Source Voltage			±30	V
Continuous Drain Current (Note 5)	$T_C = +25$ °C	-	6	Δ
V _{GS} = 10V	$T_{C} = +100^{\circ}C$	ID	4	A
Pulsed Drain Current (Note 6)		I _{DM}	24	Α
Avalanche Current, L = 60mH (Note 7)			3.5	Α
Avalanche Energy, L = 60mH (Note 7)		E _{AS}	360	mJ

Thermal Characteristics

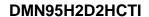
Characteristic			Max	Unit
Power Dissipation (Note 5)	$T_{C} = +25^{\circ}C$ $T_{C} = +100^{\circ}C$	P_{D}	40 14	W
Thermal Resistance, Junction to Case (Note 5)	$T_C = +25$ °C	$R_{\theta JC}$	3.6	°C/W
Operating and Storage Temperature Range			-55 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

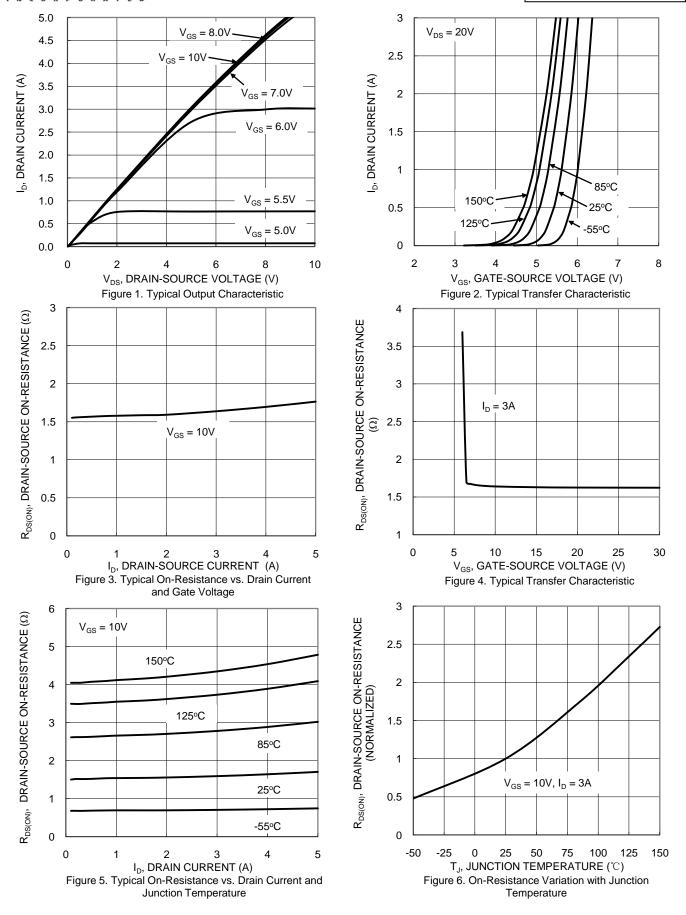
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition	
OFF CHARACTERISTICS (Note 8)							
Drain-Source Breakdown Voltage	BV _{DSS}	950	_		V	$V_{GS} = 0V, I_D = 250\mu A$	
Zero Gate Voltage Drain Current	I _{DSS}		_	1	μΑ	$V_{DS} = 950V, V_{GS} = 0V$	
Gate-Source Leakage	I _{GSS}	_	_	100	nA	$V_{GS} = \pm 30V, V_{DS} = 0V$	
ON CHARACTERISTICS (Note 8)							
Gate Threshold Voltage	V _{GS(TH)}	3	4	5	V	$V_{DS} = V_{GS}, I_D = 250 \mu A$	
Static Drain-Source On-Resistance	R _{DS(ON)}		1.7	2.2	Ω	V _{GS} = 10V, I _D = 3A	
Diode Forward Voltage	V _{SD}	_	0.85	1.2	V	V _{GS} = 0V, I _S = 6A	
DYNAMIC CHARACTERISTICS (Note 7)							
Input Capacitance	C _{iss}	_	1487	_	pF	V _{DS} = 25V, f = 1MHz, V _{GS} = 0V	
Output Capacitance	Coss	_	113	_			
Reverse Transfer Capacitance	C _{rss}	_	1	_			
Gate Resistance	Rg	_	4.7	_	Ω	$V_{DS} = 0V$, $V_{GS} = 0V$, $f = 1MHz$	
Total Gate Charge	Qg	_	20.3	_		V _{DD} = 720V, I _D = 6A, V _{GS} = 10V	
Gate-Source Charge	Q_{gs}	_	6.4	_	nC		
Gate-Drain Charge	Q_{gd}	_	6.1	_			
Turn-On Delay Time	t _{D(ON)}	_	39	_		$V_{DD} = 450V, V_{GS} = 10V,$ $R_g = 25\Omega, I_D = 6A$	
Turn-On Rise Time	t _R	_	49	_	ns		
Turn-Off Delay Time	t _{D(OFF)}	_	51	_			
Turn-Off Fall Time	t _F	_	31	_			
Body Diode Reverse Recovery Time	t _{RR}	_	607	_	ns	I 6A dl/dt _ 100A/ug	
Body Diode Reverse Recovery Charge	Q_{RR}		8.1	_	μC	$I_F = 6A$, $dI/dt = 100A/\mu s$	

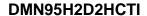
Notes:

- 5. Device mounted on infinite heatsink.
- 6. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.
- Guaranteed by design. Not subject to production testing.
 Short duration pulse test used to minimize self-heating effect.

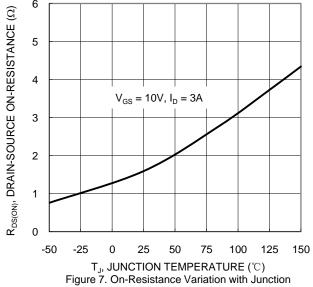












Temperature

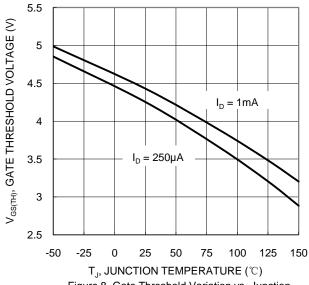
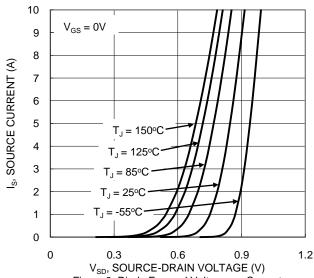
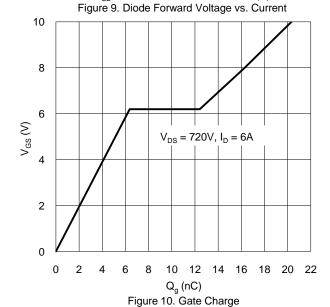
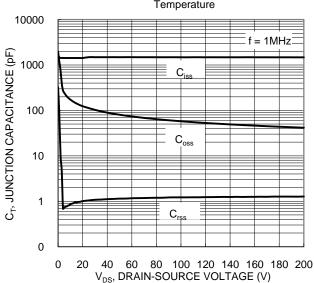


Figure 8. Gate Threshold Variation vs. Junction Temperature







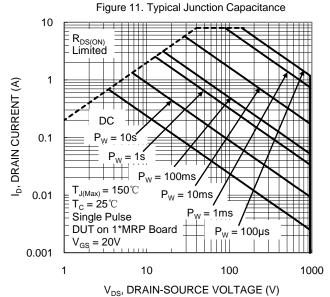


Figure 12. SOA, Safe Operation Area



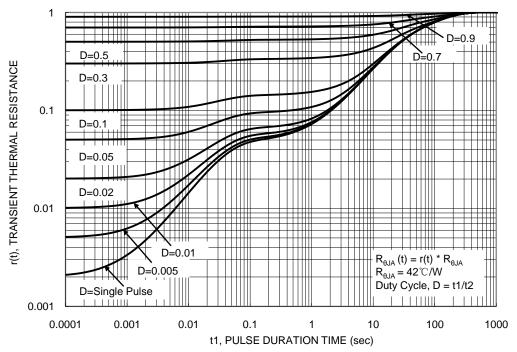


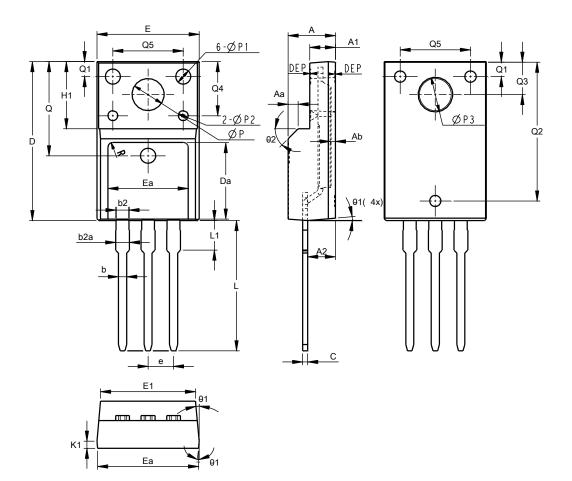
Figure 13. Transient Thermal Resistance



Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

ITO220AB (Type TH)



ITO220AB (Type TH)					
Dim	Min	Max	Тур		
Α	4.50	4.90	4.70		
A1	2.34	2.74	2.54		
A2	2.63	2.89	2.76		
Aa	1	.00 RE	F		
Ab	0.30	0.60	0.56		
b	0.75	0.90	0.80		
b2	1.23	1.38	1.28		
b2a	1.25	1.45	1.35		
С	0.45	0.60	0.50		
D	15.47	16.27	15.87		
Da	7.55	8.05	7.80		
е	2	.54 BS	С		
Е	9.86	10.46	10.16		
E1	9.26	9.66	9.46		
Ea	7.70	8.30	8.00		
Eb	9.76	10.34	10.04		
H1	6	.70 RE	F		
L	12.58	13.38	12.98		
L1	2.81	3.05	2.93		
K1	0.65	0.75	0.70		
Q	9	.40 RE	F		
Q1	1.00	2.00	1.50		
Q2	13.50	14.30	13.90		
Q3	3.15	3.45	3.30		
Q4	5.15	5.65	5.40		
Q5	6.70	7.30	7.00		
ØP	3.06	3.40	3.18		
ØP1	1.40	1.60	1.50		
ØP2	0.95	1.05	1.00		
ØP3	3.30	3.60	3.45		
θ1	3º	7º	5º		
θ2	-	45°	-		
R	0.50 REF				
DEP		0.15	0.10		
All D	All Dimensions in mm				



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