

H-Bridge in APM16 Series



Description

NXV65HR82DS1, NXV65HR82DS2, NXV65HR82DZ1, NXV65HR82DZ2



NXV65HR82DS1, NXV65HR82DS2, NXV65HR82DZ1, NXV65HR82DZ2

Table 5. ELECTRICAL SPECIFICATIONS ($T_J = 25\text{ C}$, Unless Otherwise Specified)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
BV_{DSS}	Drain-to-Source Breakdown Voltage	$I_D = 1\text{ mA}$, $V_{GS} = 0\text{ V}$	650	–	–	V
$V_{GS(th)}$	Gate to Source Threshold Voltage	$V_{GS} = V_{DS}$, $I_D = 0.97\text{ mA}$	3.0	–	5.0	V
$R_{DS(ON)}$	Q1 – Q4 MOSFET On Resistance	$V_{GS} = 10\text{ V}$, $I_D = 20\text{ A}$	–	73	82	$m\Omega$
$R_{DS(ON)}$	Q1 – Q4 MOSFET On Resistance	$V_{GS} = 10\text{ V}$, $I_D = 20\text{ A}$, $T_J = 125\text{ C}$ (Note 4)	–	133	–	$m\Omega$
g_{FS}	Forward Transconductance	$V_{DS} = 20\text{ V}$, $I_D = 20\text{ A}$ (Note 4)	–	29	–	S
I_{GSS} I_{DSS}	Gate-to-Source Leakage Current	$V_{GS} = 30\text{ V}$, $V_{DS} = 0\text{ V}$	–100	–	+100	nA

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PARAMETER DEFINITIONS

Reference to Table 5: Parameter of Electrical Specifications

BV_{DSS}	<p>Q1 – Q4 MOSFET Drain-to-Source Breakdown Voltage The maximum drain-to-source voltage the MOSFET can endure without the avalanche breakdown of the body– drain P–N junction in off state. The measurement conditions are to be found in Table 5. The typ. Temperature behavior is described in Figure 13</p>
$V_{GS(th)}$	<p>Q1 – Q4 MOSFET Gate to Source Threshold Voltage The gate-to-source voltage measurement is triggered by a threshold ID current given in conditions at Table 11. The typ. Temperature behavior can be found in Figure 12</p>
$R_{DS(ON)}$	<p>Q1 – Q4 MOSFET On Resistance RDS(on) is the total resistance between the source and the drain during the on state. The measurement conditions are to be found in Table 5.} The typ behavior can be found in Figure 10 and Figure 11 as well as Figure 17</p>
g_{FS}	<p>Q1 – Q4 MOSFET Forward Transconductance Transconductance is the gain in the MOSFET, expressed in the Equation below. t describes the change in drain current by the change in the gate–source bias voltage: $g_{fs} = [-\Delta I_{DS} / \Delta V_{GS}]_{V_{DS}}$</p>
I_{GSS}	<p>Q1 – Q4 MOSFET Gate-to-Source Leakage Current The current flowing from Gate to Source at the maximum allowed VGS The measurement conditions are described in the Table 5.</p>
I_{DSS}	<p>Q1 – Q4 MOSFET Drain-to-Source Leakage Current Drain – Source current is measured in off state while providing the maximum allowed drain-to-source voltage and the gate is shorted to the source. IDSS has a positive temperature coefficient.</p>

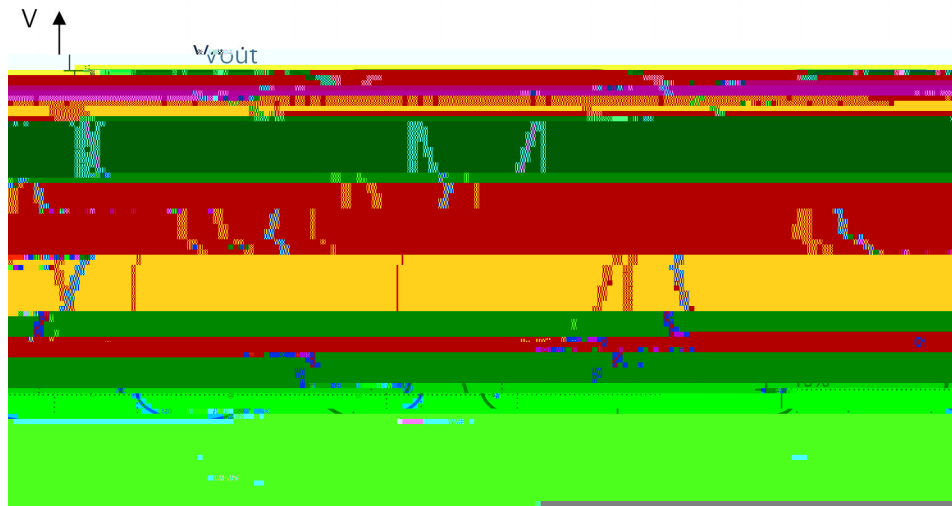


Figure 3. Timing Measurement Variable Definition

Table 8. PARAMETER OF SWITCHING CHARACTERISTICS

Turn-On Delay ($t_{d(on)}$):

TYPICAL CHARACTERISTICS

TYPICAL CHARACTERISTICS (continued)

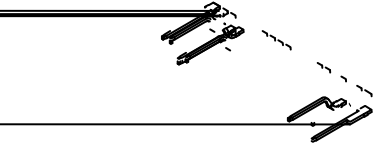
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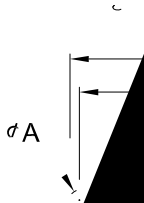
ORDERING INFORMATION

Part Number	Package	Lead Forming	Snubber Capacitor Inside	DBC Material	Pb-Free and RoHS Compliant	Operating Temperature (T _A)	Packing Method
NXV65HR82DS1	APM16-CAA	Y-Shape	Yes	Al ₂ O ₃	Yes	-40 C~125 C	Tube
NXV65HR82DS2	APM16-CAB	L-Shape	Yes	Al ₂ O ₃	Yes	-40 C~125 C	Tube
NXV65HR82DZ1	APM16-CAA	Y-Shape	No	Al ₂ O ₃	Yes	-40 C~125 C	Tube
NXV65HR82DZ2	APM16-CAB	L-Shape	No	Al ₂ O ₃	Yes		

APMCA-A16 / 16LD, AUTOMOTIVE MODULE
CASE MODGF
ISSUE C

DATE 03 NOV 2021





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