H-Bridge in APM16 Series

2DZ1, NXV65HR82DZ2

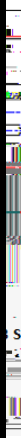

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Table 5. ELECTRICAL SPECIFICATIONS (T_J = 25 C, Unless Otherwise Specified)

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

PARAMETER DEFINITIONS

Reference to Table 5: Parameter of Electrical Specifications

BV_{DSS}	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
$V_{GS(th)}$	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
$R_{DS(ON)}$	Q1 – Q4 MOSFET On Resistance $R_{DS(on)}$ 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
g_{FS}	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: $g_{fs} = [-\Delta I_{DS} / \Delta V_{GS}]_{VDS}$
I_{GSS}	Q1 – Q4 MOSFET Gate−to−Source Leakage Current The current flowing from Gate to Source at the maximum allowed V_{GS} The measurement conditions are described in the Table 5.
I_{DSS}	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. I_{DSS} has a positive temperature coefficient.

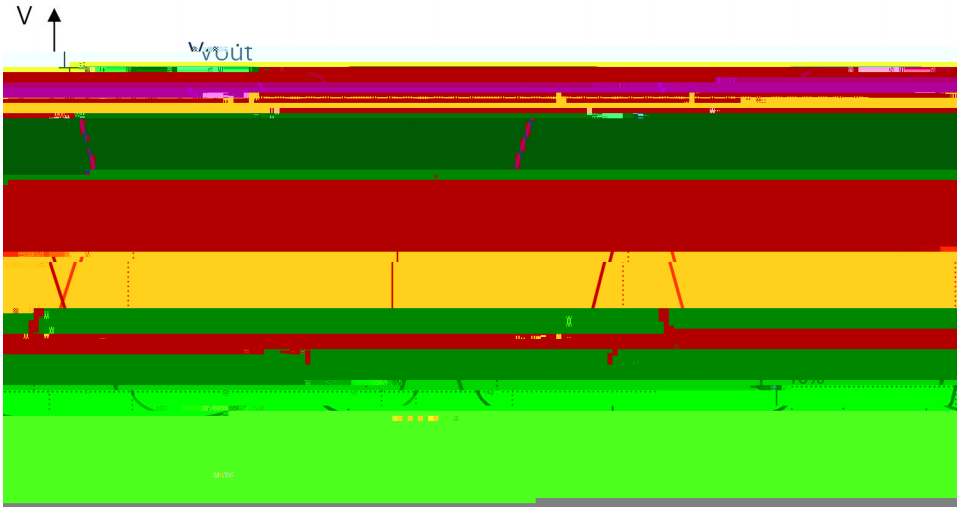

Figure 3. Timing Measurement Variable Definition

Table 8. PARAMETER OF SWITCHING CHARACTERISTICS

Turn−On Delay ($t_{d(on)}$):

TYPICAL CHARACTERISTICS

TYPICAL CHARACTERISTICS (continued)

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_2O_3	Yes	−40 C~125 C	Tube
NXV65HR82DS2	APM16−CAB	L−Shape	Yes	Al_2O_3	Yes	−40 C~125 C	Tube
NXV65HR82DZ1	APM16−CAA	Y−Shape	No	Al_2O_3	Yes	−40 C~125 C	Tube
NXV65HR82DZ2	APM16−CAB	L−Shape	No	Al_2O_3	Yes		

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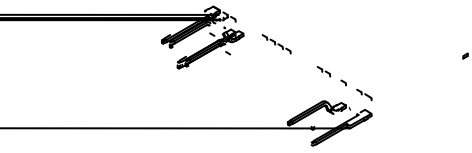

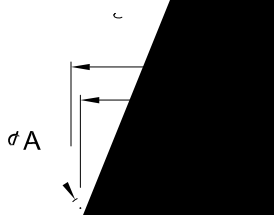

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