Automotive Power MOSFET Module

NXV10V160ST1

- 3 Phase MOSFET Module
- Electrically Isolated DBC Substrate for Low Thermal Resistance
- Temperature Sensing
- Compact Design for Low Total Module Resistance
- Module Serialization for Full Traceability
- AQG324 Qualified and PPAP Capable
- Pb−free, RoHS and UL94V−0 Compliant

- 48V E−Compressor and Other 48 V Auxiliaries

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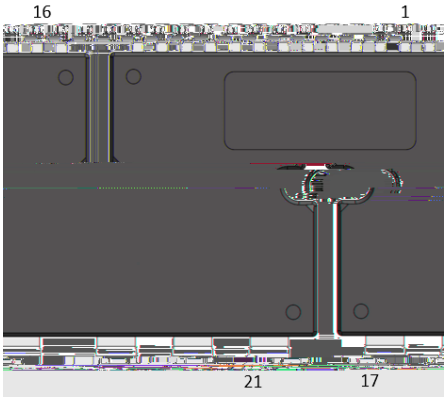
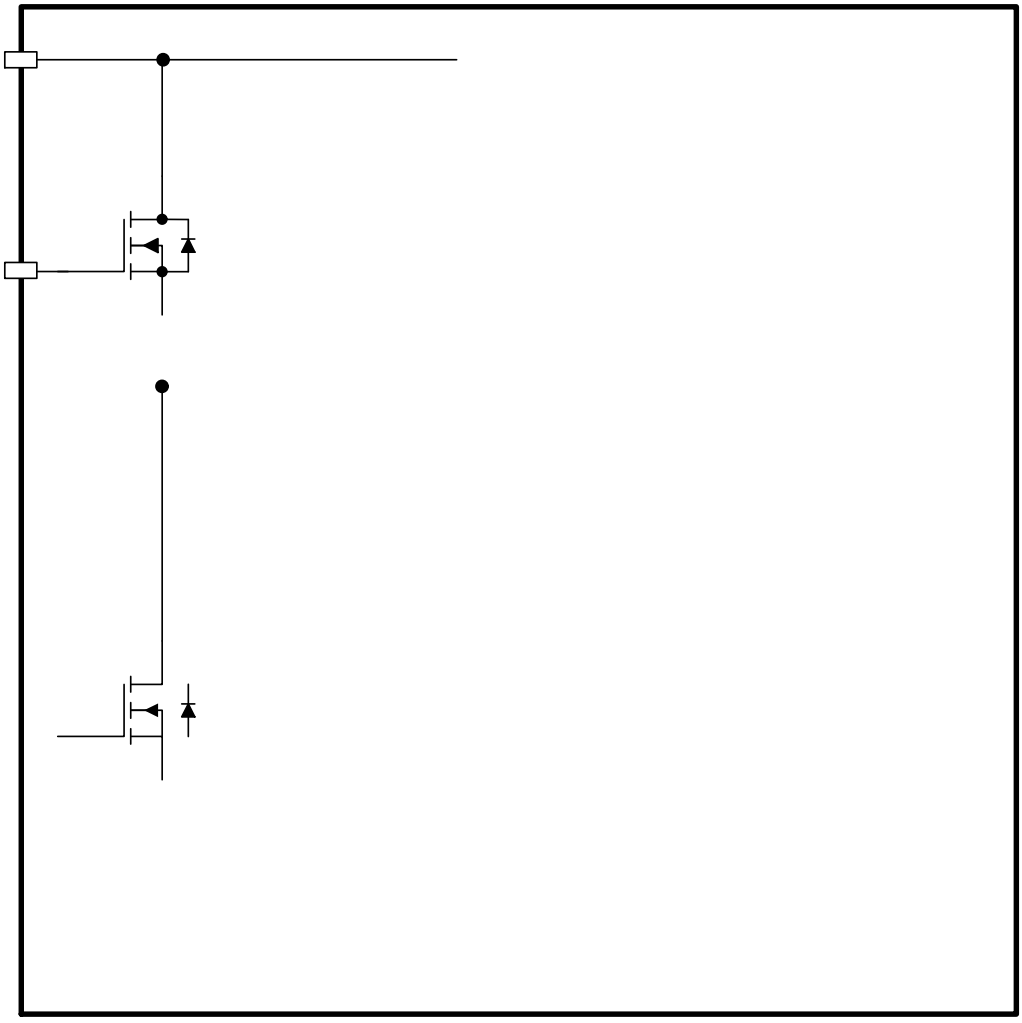
Publication Order Number:

NXV10V160ST1	APM21−CGA	Tube	44 Units / Box



1	NTC+	NTC Thermistor Terminal 1
2	NTC−	NTC Thermistor Terminal 2
3	Sense Q6	Source of Q6
4	G3	Gate of Q3, high side Phase W MOSFET
5	Sense Q3	Source of Q3
6	G6	Gate of Q6, low side Phase W MOSFET
7	Sense Q5	Source of Q5
8	G2	Gate of Q2, high side Phase V MOSFET
9	Sense Q2	Source of Q2
10	G5	Gate of Q5, low side Phase V MOSFET
11	G4	Gate of Q4, low side Phase U MOSFET
12	Sense Q4	Source of Q4
13	Sense Q1	Source of Q1
14	G1	Gate of Q1, high side Phase U MOSFET
15	Vbat Sense	Common pins for Sense of Vbat
16	Vbat Sense	Common pins for Sense of Vbat, one of pin 15 or 16 can be used for Sense of Vbat
17	B+	Battery voltage power lead
18	GND	Battery return power lead
19	U	Phase U (Phase 1)
20	V	Phase V (Phase 2)
21	W	Phase W (Phase 3)



$R_{\theta JC}$	Thermal Resistance, Junction−to−Case (Note 1)	−	0.26	0.36	°C/W

1. Test method compliant with MIL−STD−883−1012.1

−	Leakage @Isolation Voltage, V_{AC} = 3 kV, 1 second	−	−	250	μA

(T_J = 25°C; unless otherwise noted)

B_{VDSS}	Drain−to−Source Breakdown Voltage	I_D = 250 μA, V_{GS} = 0 V	100	−	−	V
I_{DSS}	Drain−to−Source Leakage Current	V_{GS} = 0 V, V_{DS} = 100 V	−	−	5	μA
I_{GSS}	Gate−to−Source Leakage Current	V_{GS} = ±20 V	−	−	±100	nA
$V_{GS(TH)}$	Gate−to−Source Threshold Voltage	V_{GS} = V_{DS}, I_D = 250 μA	2.0	−	4.5	V
$R_{DS(ON)}$ Q1	MOSFET $R_{DS(ON)}$					

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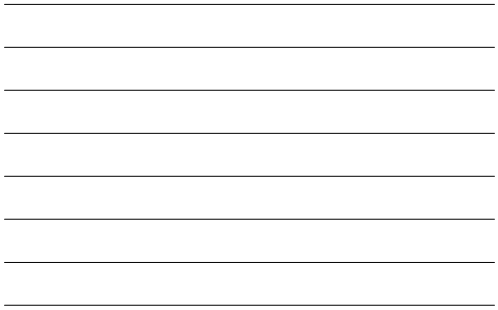
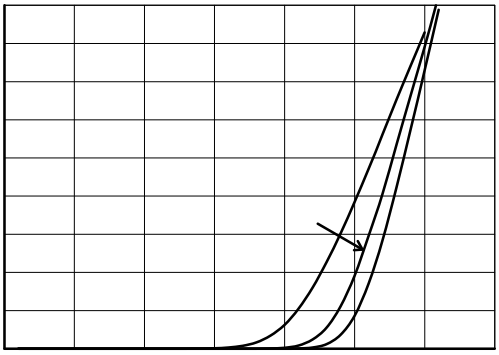
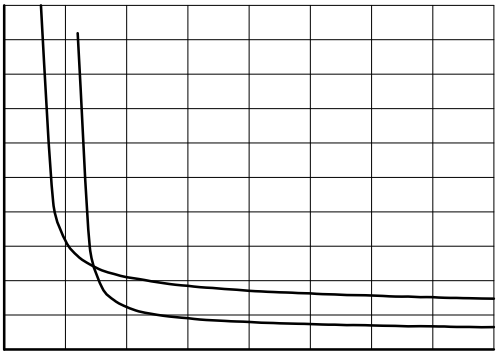
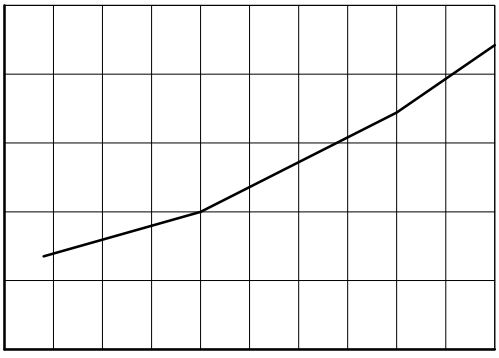
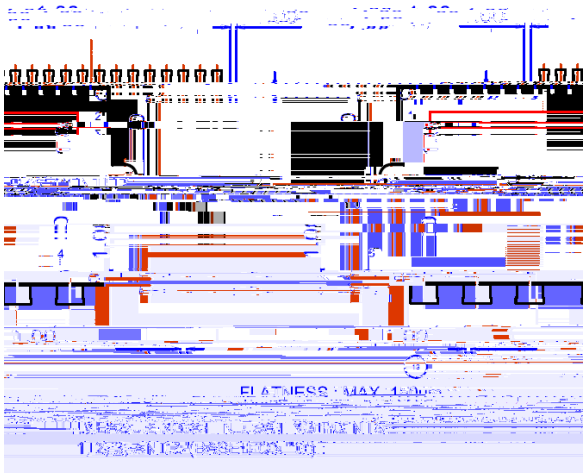
MOSFET $R_{DS(ON)}$ Q1	B+	Phase 1	Vbat	Sense Q1
MOSFET $R_{DS(ON)}$ Q2	B+	Phase 2	Vbat	Sense Q2
MOSFET $R_{DS(ON)}$ Q3	B+	Phase 3	Vbat	Sense Q3
MOSFET $R_{DS(ON)}$ Q4	Phase 1	GND	Sense Q1	Sense Q4
MOSFET $R_{DS(ON)}$ Q5	Phase 2	GND	Sense Q2	Sense Q5
MOSFET $R_{DS(ON)}$ Q6	Phase 3	GND	Sense Q3	











Device Flatness	Refer to Figure 12	0	–	150	μm
Mounting Torque	Mounting screw: M3, recommended 0.7 Nm	0.4	–	1.4 (Note 6)	Nm
Weight		–	21.2	–	g

6. Max Torque rating can be different by the type of screw, such as the screw head diameter, use or without use of Washer. In case of special screw mounting method is applied, contact to for the proper information of mounding condition.