



M.S.KENNEDY CORP.

75 VOLT 8 AMP MOSFET H-BRIDGE PWM MOTOR DRIVER/AMPLIFIER

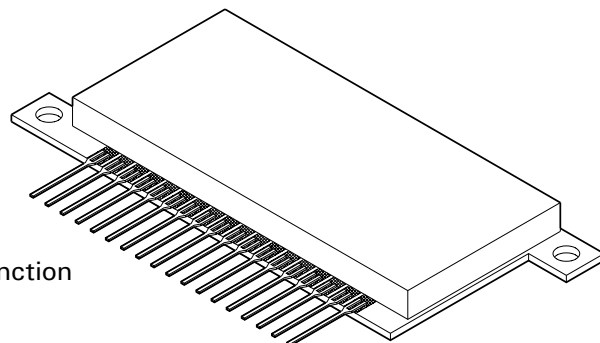
4220

4707 Dey Road Liverpool, N.Y. 13088

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FEATURES:

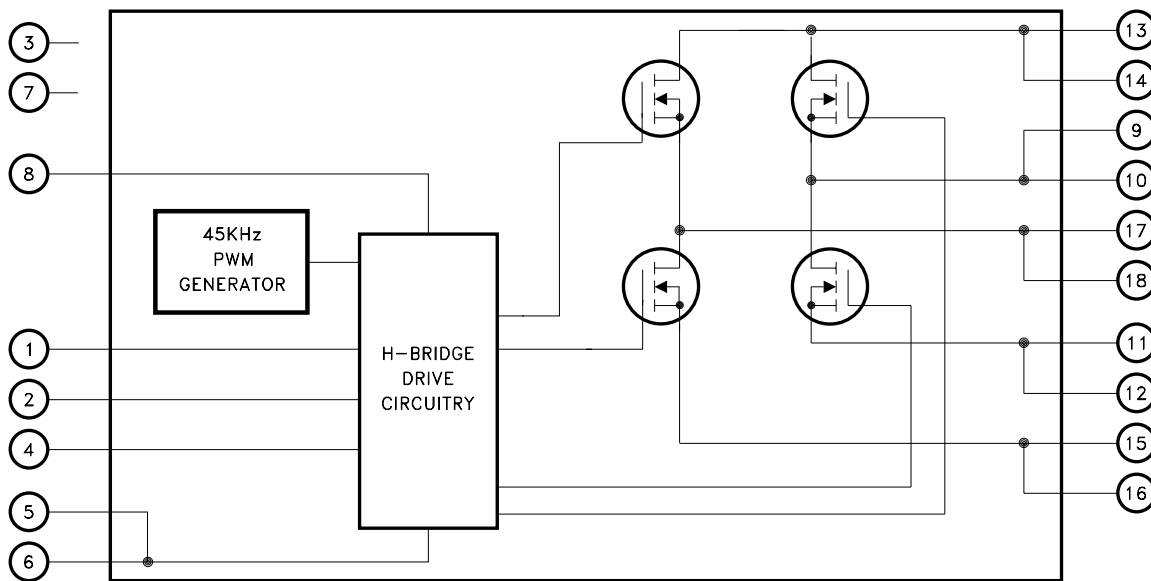
- Low Cost Complete H-Bridge
- 8 Amp Capability, 75 Volt Maximum Rating
- Self-contained Smart Lowside/Highside Drive Circuitry
- Internal PWM Generation, Shoot-through Protection
- Isolated Case Allows Direct Heatsinking
- Four Quadrant Operation, Torque Control Capability
- Logic Level Disable Input
- Logic Level High Side Enable Input for Special Modulation or Function



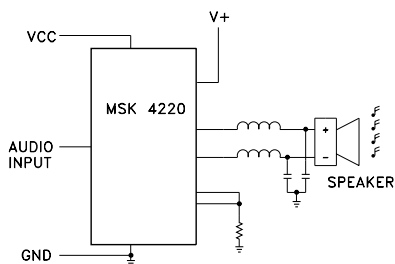
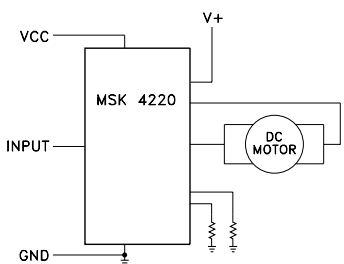
DESCRIPTION:

The MSK 4220 is a complete H-Bridge circuit to be used for DC brushed motor control or Class D switchmode amplification. All of the drive/control circuitry for the lowside and highside switches are internal to the circuit. The PWM circuitry is internal as well, leaving the user to only provide an analog signal for the motor speed/direction, or audio signal for switchmode audio amplification. The MSK 4220 is constructed on a space efficient ceramic coated insulated metal substrate that can be directly connected to a heatsink.

EQUIVALENT SCHEMATIC



TYPICAL APPLICATIONS



PIN-OUT INFORMATION

1 HEN	18 Output B
2 Disable	17 Output B
3 N/C	16 Rsense B
4 Input	15 Rsense B
5 Ground	14 V +
6 Ground	13 V +
7 N/C	12 Rsense A
8 Vcc	11 Rsense A
9 Output A	10 Output A

ABSOLUTE MAXIMUM RATINGS

V ₊	High Voltage Supply	75V	T _{ST}	Storage Temperature Range	-65°C to +150°C
V _{CC}	Logic Supply	16V	T _{LD}	Lead Temperature Range (10 Seconds)	300°C
I _{OUT}	Continuous Output Current	8A	T _C	Case Operating Temperature MSK4220	-25°C to +125°C
I _{PK}	Peak Output Current	14A	T _J	Junction Temperature	+150°C
V _{OUT}	Output Voltage Range	GND-2V min. To V ₊ max.			
θ _{JC}	Thermal Resistance (Output Switches)	5.3°C/W			

ELECTRICAL SPECIFICATIONS

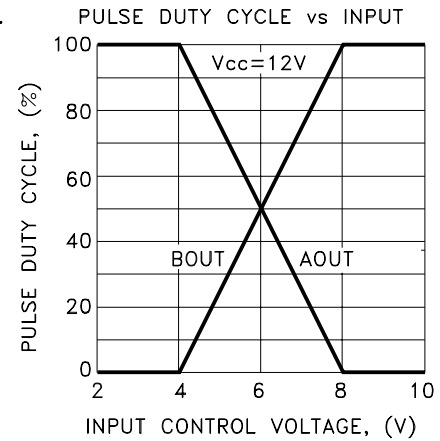
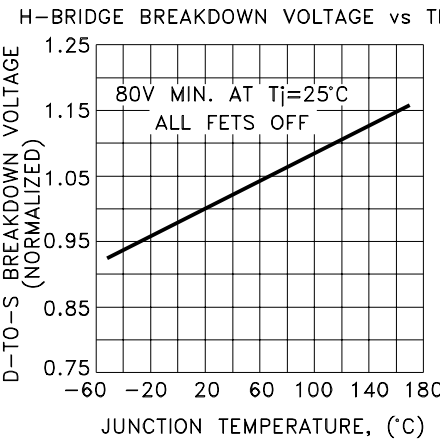
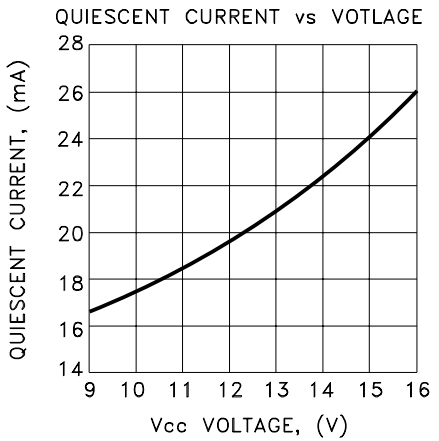
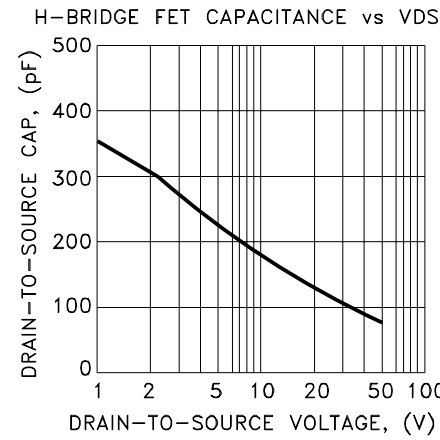
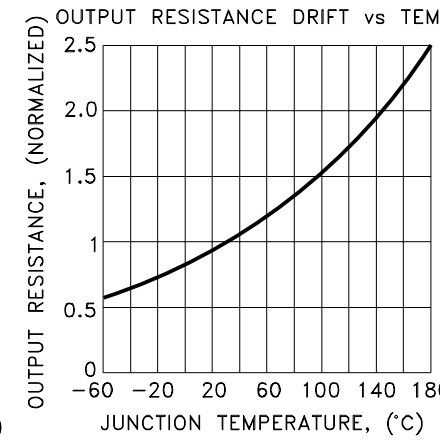
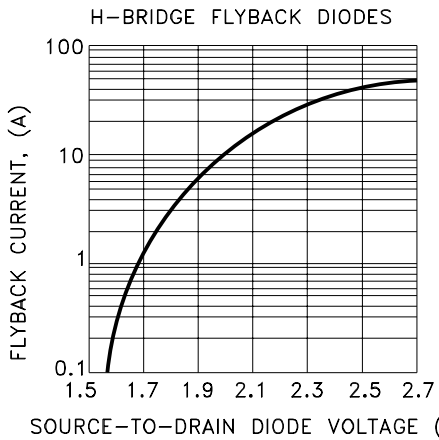
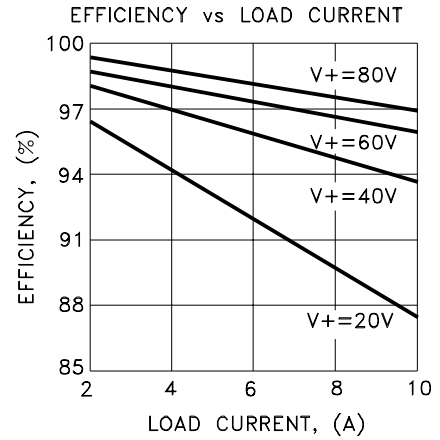
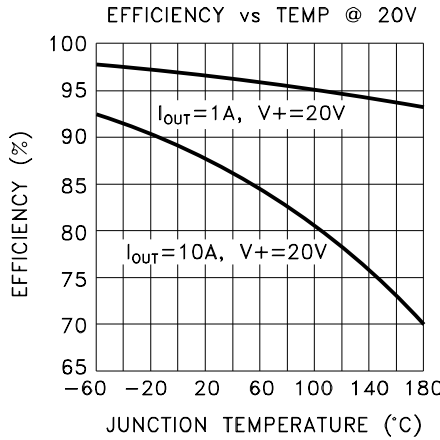
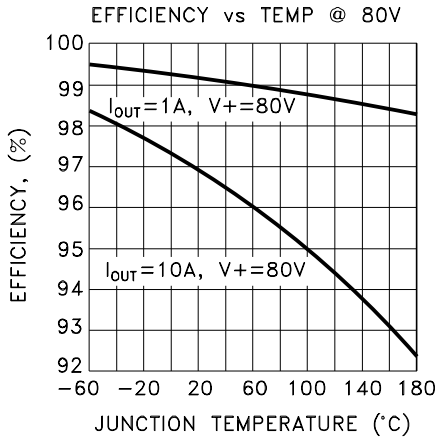
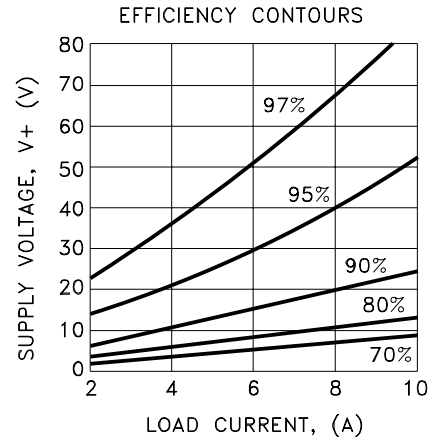
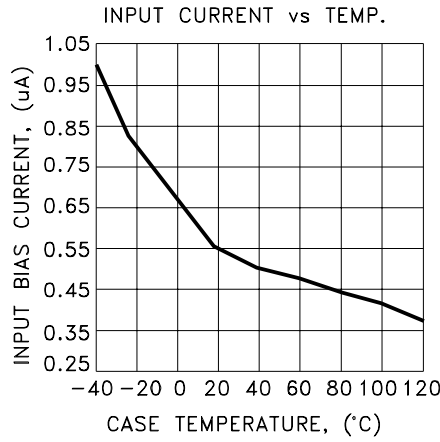
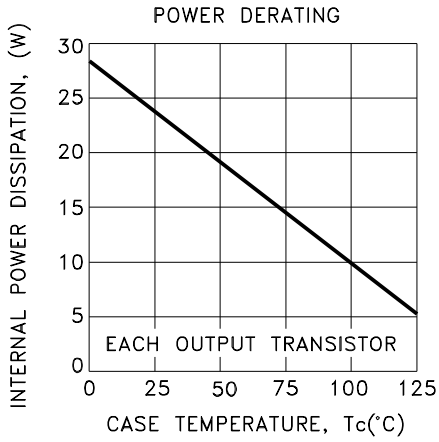
All Ratings: T_c = +25°C Unless Otherwise Specified

Parameter	Test Conditions ②	MSK 4220			Units
		Min.	Typ.	Max.	
OUTPUT CHARACTERISTICS					
V _{DS(ON)} Voltage ①	Each MOSFET I _D = 10A ③	-	1.7	2.5	V
Instantaneous Forward Voltage ①	Each MOSFET I _S = 10A Intrinsic Diode ③	-	2.0	2.5	V
Reverse Recovery Time ①	Intrinsic Diode	-	-	280	nS
Leakage Current ①	Each MOSFET V ₊ = 70V	-	1.0	25	uA
PWM Frequency		40	45	50	KHz
V_{CC} SUPPLY CHARACTERISTICS					
Quiescent Bias Current	Analog Input = 6V _{DC}	-	20	25	mA
V _{CC} Voltage Range ①		9	12	16	V
INPUT SIGNAL CHARACTERISTICS ①					
Analog Input Voltage	Output A,B = 50% Duty Cycle	-	6	-	V
Analog Input Voltage	Output A = 100% Duty Cycle High	-	4	-	V
Analog Input Voltage	Output B = 100% Duty Cycle High	-	8	-	V
LOGIC CONTROL INPUTS ①					
Disable Input	Input Voltage LO	-	-	0.8	V
	Input Voltage HI	2.7	-	-	V
	Input Current (DISABLE = 0V)	-	-	-135	uA
HEN Input	Input Voltage LO	-	-	0.8	V
	Input Voltage HI	2.7	-	-	V
	Input Current (HEN = 0V)	-	-	-270	uA
SWITCHING CHARACTERISTICS ①					
	R _L = 100Ω				
Rise-Time		-	72	108	nS
Fall-Time		-	340	500	nS
Dead-Time		-	100	-	nS

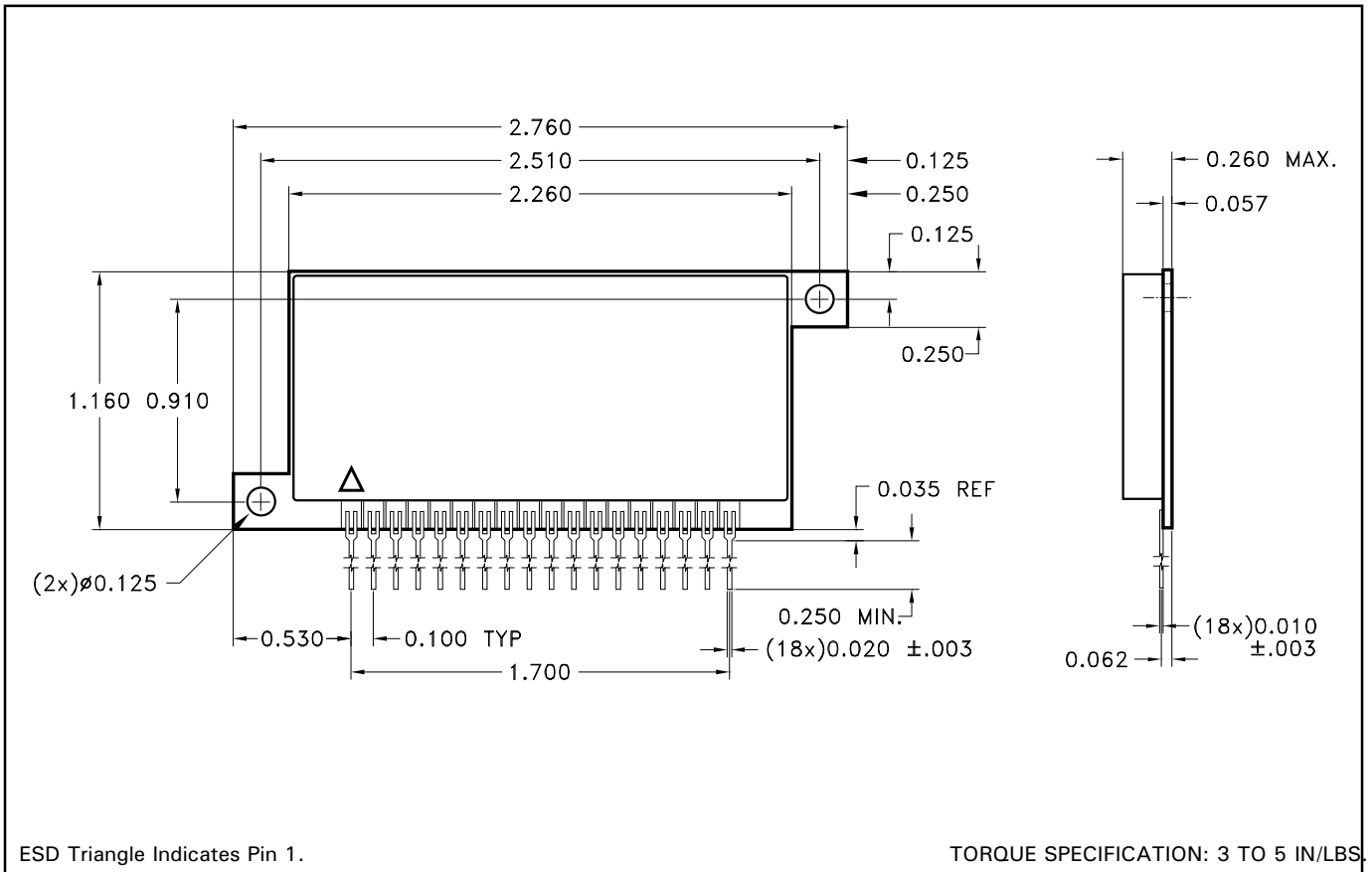
NOTES:

- ① Guaranteed by design but not tested. Typical parameters are representative of actual device performance but are for reference only.
- ② V_{CC} = +12V unless otherwise specified.
- ③ Measure using a 300μS pulse with a 2% Duty Cycle.

TYPICAL PERFORMANCE CURVES



MECHANICAL SPECIFICATIONS



NOTE: ALL DIMENSIONS ARE ± 0.010 UNLESS OTHERWISE LABELED.

ORDERING INFORMATION

Part Number	Screening Level
MSK4220	Industrial

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