

DALI 2.0 Dimming Chip KMD02

With ARM® Cortex®-M0 core running, Koolmesh developed KMD02 as microcontroller, which is based on Digital Addressable Lighting Interface (DALI) technology. Encoded with software, together with many system level peripheral functions, such as I/O Port, Timer, PWM have been incorporated into the KMD02 to make it powerful for a wide range of applications.

Additionally, KMD02 is equipped with ISP (In-System Programming) and ICP (In-Circuit Programming) functions, which allow the user to update program memory without removing the chip from the actual end product.

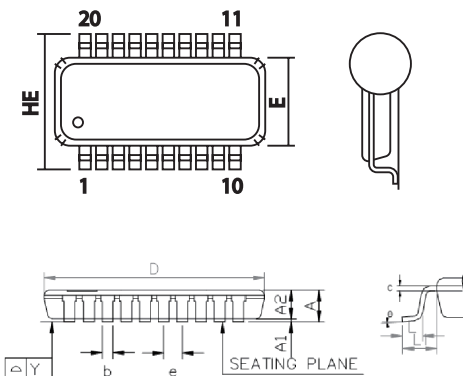


Standards
IEC62386-101:2018
IEC62386-102:2018
IEC62386-207:2018(LED module)
IEC62386-209:2011(color control)
Compatible with DT6/DT8 protocol

Product Features

- ARM® Cortex®-M0 core running up to 48 MHz
- One 24-bit system timer
- Supports low power Idle mode
- A single-cycle 32-bit hardware multiplier
- NVIC for the 32 interrupt inputs, each with 4-level of priority
- Supports Serial Wire Debug (SWD) interface and two watchpoints/four breakpoints
- Built-in LDO for wide operating voltage ranged: 2.1V to 5.5V
- Temperature range -40 °C ~ 105 °C
- Serial interface to support DALI, PUSH, PWM communication
- Software stack for DALI version 2 standard -102 (control gear)

Mechanical Specifications(mm)



Symbol	Dimension(mm)		
	Min.	Nmd.	Max.
A	-	-	1.2
A1	0.05	-	0.15
A2	0.90	0.9	1.05
E	4.30	4.40	4.50
HE	6.4 BSC		
D	6.40	6.50	6.60
L	0.50	0.60	0.75
L1	1.00 REF		
b	0.19	-	0.30
e	0.65 BSC		
c	0.09	-	0.20
Y	0.10 BASIC		

Pins Function

No.	Name	Type	Description
1	VDD		Power supply for I/O ports and LDO source for internal PLL and digital function.
2	DALI_RX	A	Dali receiver
3	ERC_W		LED fault detection for warm color
4	ERC_C	I/O	LED fault detection for cool color
5	N/A		Reserved
6	N/A		Reserved
7	nRES	A	Chip reset
8	N/A		Reserved
9	DALI_TX		Dali transmitter
10	ICE_DAT		Serial wired debugger data pin
11	N/A		Reserved
12	ICE_CLK		Serial wired debugger clock pin
13	N/A		Reserved
14	PUSH_DIM	I/O	Reserved
15	N/A		Reserved
16	N/A		Reserved
17	N/A		Reserved
18	PWM_C	I/O	PWM dimming output / cool color
19	PWM_W	I/O	PWM dimming output / warm color
20	VSS	A	Ground pin for digital circuit.

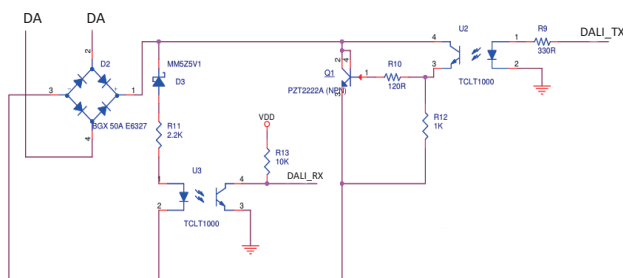
Pin Assignment

VDD	1	20	VSS
DALI_RX	2	19	PWM-W
ERC_W	3	18	PWM-C
ERC_C	4	17	N/A
N/A	5	16	N/A
N/A	6	15	N/A
nRES	7	14	Push-DIM
N/A	8	13	N/A
DALI_TX	9	12	ICK CLK
ICE_DAT	10	11	N/A

General information

Conformity	IEC62386-101:2018; IEC62386-102:2018; IEC62386-207:2018; IEC62386-209:2018
Operating temperature	-40°C ~ +105°C
Package	20-pin TSSOP
Operating voltage	2.1-5.5V
Target application	DALI control gear (DALI version 2)

Reference circuit diagram



Note: above circuit diagram used for test purpose only, final adjustment pending on actual product function design.