Snowdragon Industrial Co.,Ltd

DATA SHEET

MODEL No : SD-2352 AX

ENG. No:

PREPARED BY	CHECKED BY	APPROVED BY
CUSTOMER APPROVED SIGNATURES		

*0.25inch (6.2mm) DIGIT HEIGHT
*CONTINUOUS UNIFORM SEGMENTS
*LOW POWER REQUIREMENT
*EXCELLENT CHARACTERS APPEARANCE
*WIDE VIEWING ANGLE
*SOLID STATE RELIABILITY

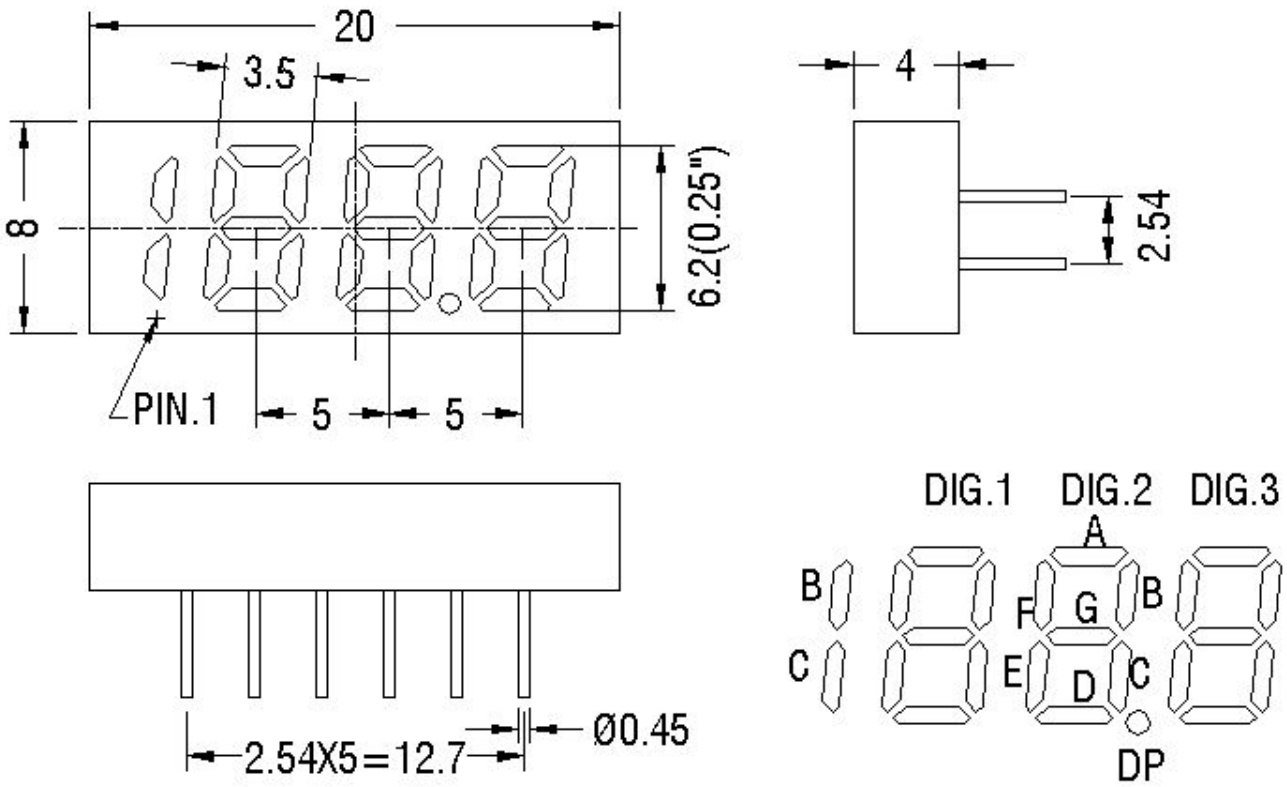
DESCRIPTION

*The 0.25 inch (6.2mm) digit height 4 digit seven-segment 、 icon display.
*The device is single-color (blue) applicable display.
*The device has a black face and white segments.

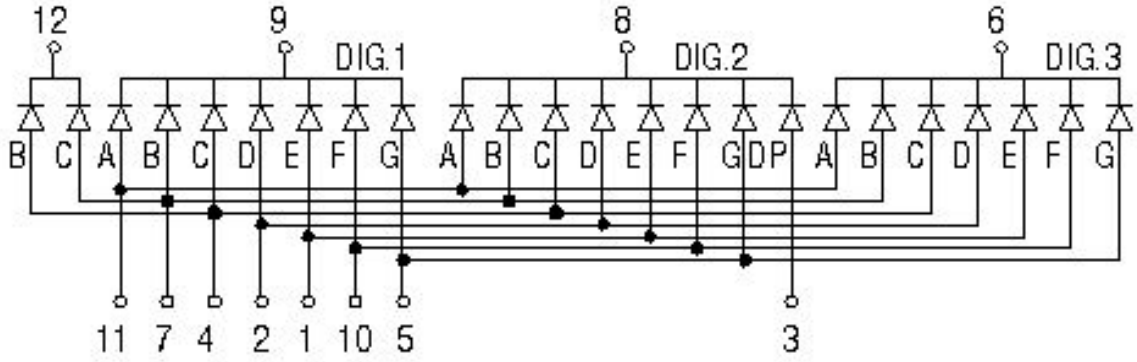
DEVICE

PART NO.	DESCRIPTION
BLUE	Multiplex Common Cathode
SD-2352 AX	

P ACKAGE DIMENSIONS



INTERNAL CIRCUIT DIAGRAM



NOTES:All dimensions are in millimeters. Tolerances are ±0.25mm unless otherwise noted.

ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL		blue		UNIT
PowerDissipationPerChip	Pd		87		mW
Peak Forward Current Per Chip (Frequency 1Khz,10％duty cycle)	Ifp	100			mA
Continuous Forward Current Per Chip	I_F	25			mA
Derating Linear From 25℃ Per Chip		0.33			mA/℃
Reverse Voltage Per Chip	V_R	5			V
Operating Temperature Range	T_A	-25℃ to +85℃			
Storage Temperature Range	Tstg	-25℃ to +85℃			
Solder Temperature:max 260℃ for max 3 sec at 1.6mm below seating plane					

*see figure 5 to establish pulsed condition

ELECTRICL/OPTICAL CHARACTERISTICS AT Ta=25℃

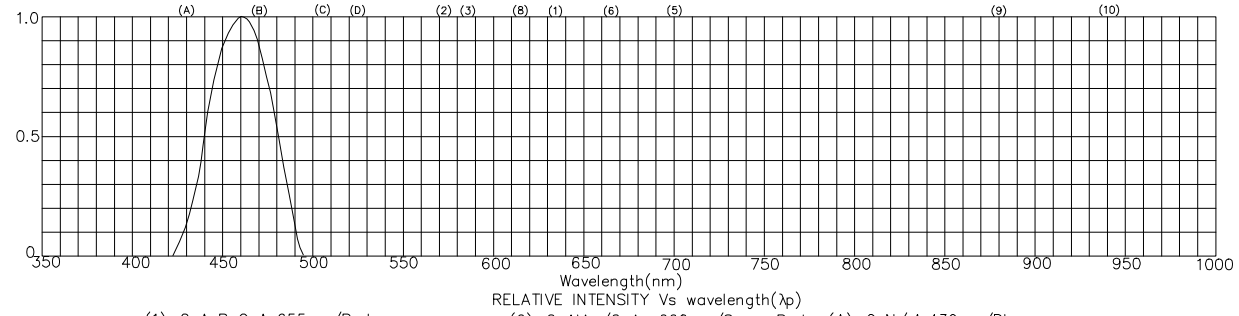
PARAMETER		SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITION
Average luminous intensity per segment		IV	/	/	/	mcd	If=10mA
	blue		100	/	130		
			/	/	/		
Dominant wavelength		λd	/	/	/	nm	If=20mA
	blue		466	/	470		
			/	/	/		
Spectral line half-width		Δλ				Nm	If=20mA
	blue		20				
Forward voltage per chip		Vf	/	/	/	V	If=20mA
	blue		/	3.0	3.5		
			/	/	/		
Reverse current per chip		Ir	10			uA	Vr=5v
Luminous entensity matching ratio		iv-m	2:1				If=10mA

Note:Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commision Internationale De L'Eclairage) eye-response curve.

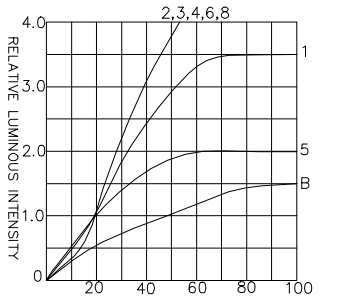
TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25 °C Ambient Temperature Unless Otherwise Noted)

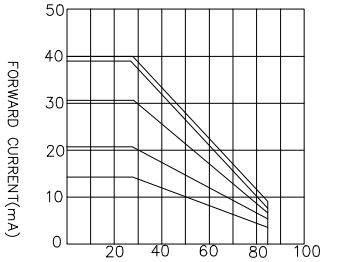
TYPICAL ELECTRICAL—OPTICAL CHARACTERISTICS CURVES



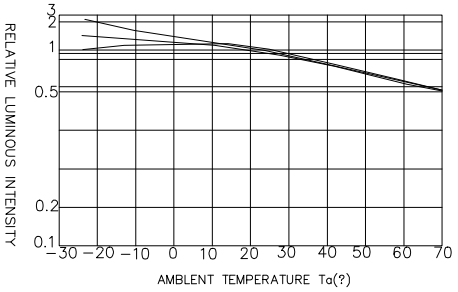
(1)—GaAsP GaAs655nm/Red
(2)—GaP 568nm/Yellow Green
(3)—GaAsP/GaP 585nm/Yellow
(4)—GaAsP/GaP 635nm/Orange ?Hi—Eff Red
(5)—GaP 700nm/Bright Red
(6)—GaAlAs/GaAs 660nm/Super Red
(7)—GaAsP/Ga)610nm/Super Red
(8)—GaAlAs880nm
(9)—GaAs/GaAs&GaAlAs/GaAs940nm
(A)—GaN/sic430nm/Blue
(B)—InGaN/sic470nm/Blue
(C)—InGaN/sic502nm/Ultra Green
(D)—InGaAl/sic523nm/Ultra Green

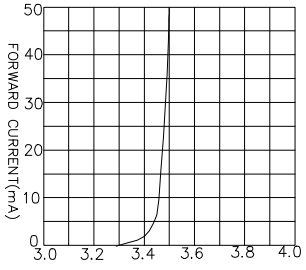


RELATIVE LUMINOUS INTENSITY VS.FORWARD CURRENT

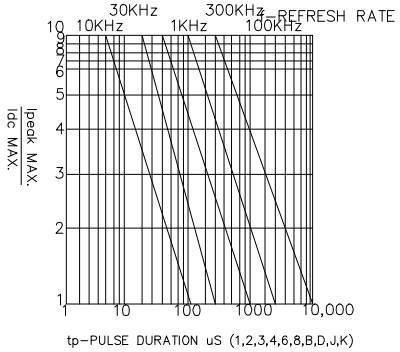


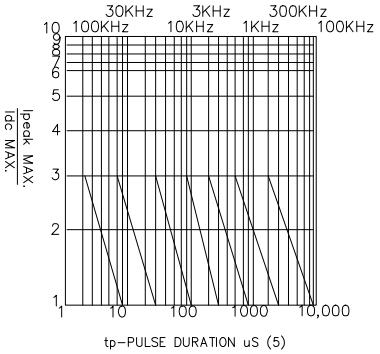
FORWARD CURRENT VS.AMBIENT TEMPERATURE





FORWARD VOLTAGE (VF) FORWARD CURRENT VS.FORWARD VOLTAGE





NOTE: 25?free air temperature unless speeified.

TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES

LED NUMERIC RELIABLITY

• Test Items And Results

Type	Test Item	REF. Standard	Test Condition	Note	Number of Damaged
Environmental Sequence	Temperature Cycle	JIS C 7021 (1997) A-4	-20℃ → 25℃ → 80℃ → 25℃ 30mins,5mins,30mins,5mins	100 cycles	0/100
	High Humidity Heat Cycle	JIS C 7021 (1997) A-5	30℃ → 65℃ 90%RH 24hrs/1cycle	10 cycles	0/100
	High Temperature Storage	JIS C 7021 (1997) B-10	Ta=80℃	1000hrs	0/100
	Humidity Heat Storage	JIS C 7021 (1997) B-11	Ta=60℃ RH=90%	1000hrs	0/100
	Low Temperature Storage	JIS C 7021 (1997) B-12	Ta= -30℃	1000hrs	0/100
Operation Sequence	Life Test	JIS C 7035 (1985)	Ta=25℃ I_F=20mA	1000hrs	0/100
	High Humidity Heat Life Test	*	60℃ RH=90% I_F=20mA	500hrs	0/100
	Low Temperature Life Test	*	Ta= -20℃ I_F=20mA	1000hrs	0/100
Destructive Sequence	Resistance to Soldering Heat	JIS C 7021 (1997) A-11	Tsol=260 ± 5℃,10sec (3mm from the base of the epoxy bulb)	1 time	0/20
	Solderability	JIS C 7021 (1997) A-2	Tsol=235 ± 5℃,5sec (Using flux)	1 time (over 95%)	0/20
	Lead Pull/Bend Test	JIS C 7021 (1997)A-11	Load 2.5N (0.25kgf) 0° →90° →0° Bending 3 times	No noticeable damage	0/20

* Refer to reliability test standard specification for in this line.

• Criteria for Judging The Damage

Item	Symbol	Test Condition	Criteria for Judgment	
			Min.	Max.
Forward Voltage	V_F	I_F = 20mA	---	Initial data x 1.1
Reverse Current	I_R	V_R = 5V	---	Initial data x 2.0
Luminous Intensity	Iv	I_F = 20mA	Initial data x 0.7	---