

**Harvatek 14*6*10mm Transmissive Sensor
HV-21S140100/S11C**

Official Product	HV-21S140100/S11C	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-050-028
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1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

Official Product	HV-21S140100/S11C	Customer Part No.		Data Sheet No.
	*****	*****		CDAE-050-028
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Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified

RoHS Compliant



Orderable Information

H V - 21 S 140 100 / S 11 C

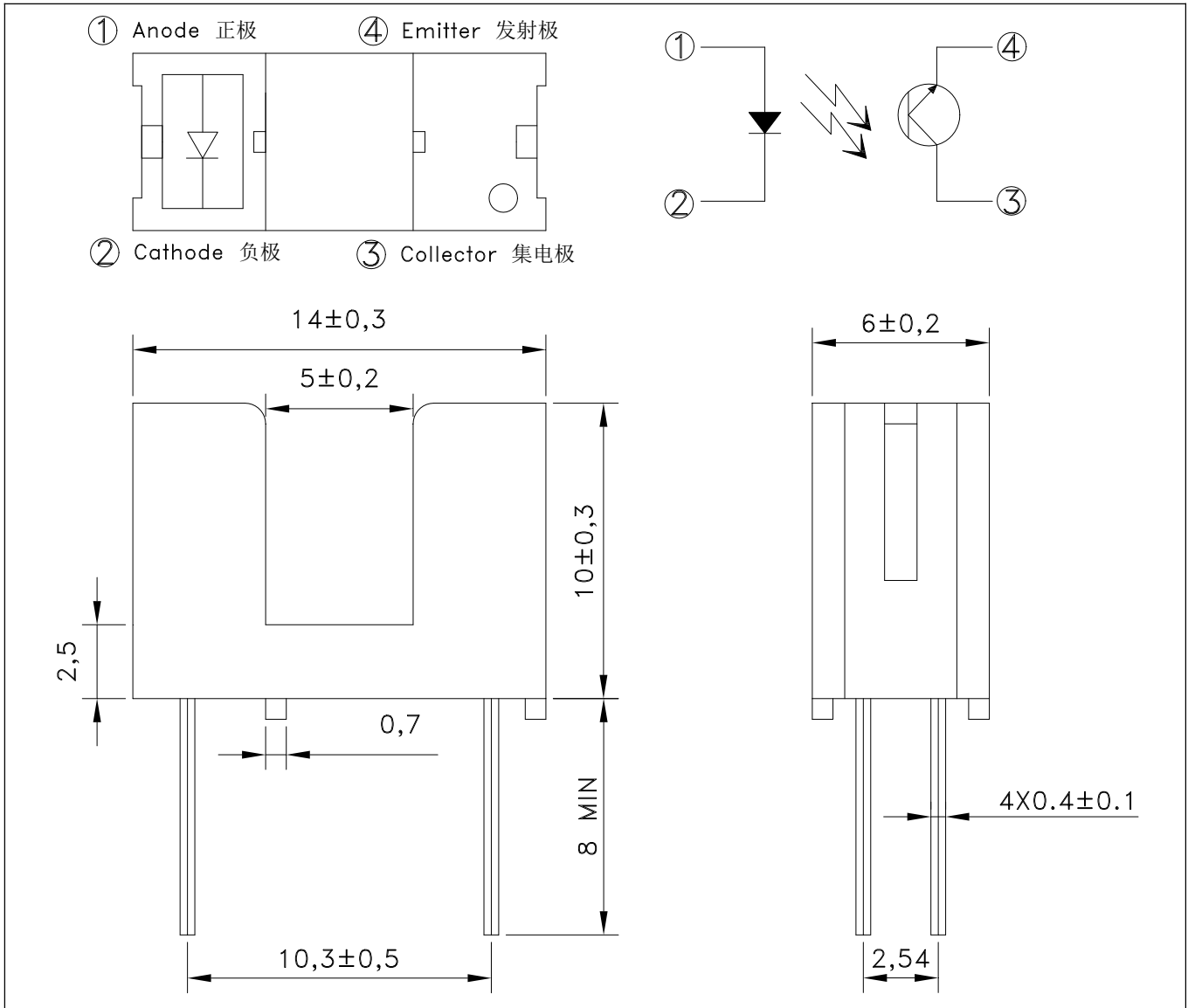
Series Name	Color Code	Remark
HV : HARVATEK	21S140100 : 14*6*10mm Transmissive Sensor. With AlGaAs Infrared emitter & Silicon Phototransistor. S11 : HARVATEK Part No. C : Water Clear	

Features:

- Low power consumption.
- High analytic.
- Fast response.
- Good lock and easy to assembly.

Official Product	HV-21S140100/S11C	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-050-028
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			Page 3/11

Package Dimensions



Notes:

- 1.All dimensions are millimeters.
- 2.Tolerance is +/-0.25mm unless otherwise noted.
- 3.Specifications are subject to change without notice.

Official Product	HV-21S140100/S11C	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-050-028
Specifications are subject to change without notice. Data and drawings herein are copyrighted.	Nov.11 2019	Version of 1.1	Page 4/11

Absolute Maximum Ratings at Ta=25°C

Parameter		Symbol	Rating	Unit
Emitter	Forward Current	I _F	50	mA
	Power Dissipation	P _d	75	mW
	Reverse Voltage	V _R	5	V
	Peak Forward Current *1	I _{FP}	1	A
Receiver	Collector Current	I _c	20	mA
	Power Dissipation	P _d	75	mW
	Collector-Emitter Voltage	V _{ceo}	30	V
	Emitter-Collector Voltage	V _{eco}	5	V
Operating Temperature		T _{opr}	-40to+85	°C
Storage Temperature		T _{stg}	-40to+100	°C
Soldering Temperature *2		T _{sol}	260±5	°C

*1: Pulse Width ≦ 100 μ s and Duty ≦ 1% *2: Soldering time ≦ 5 seconds.

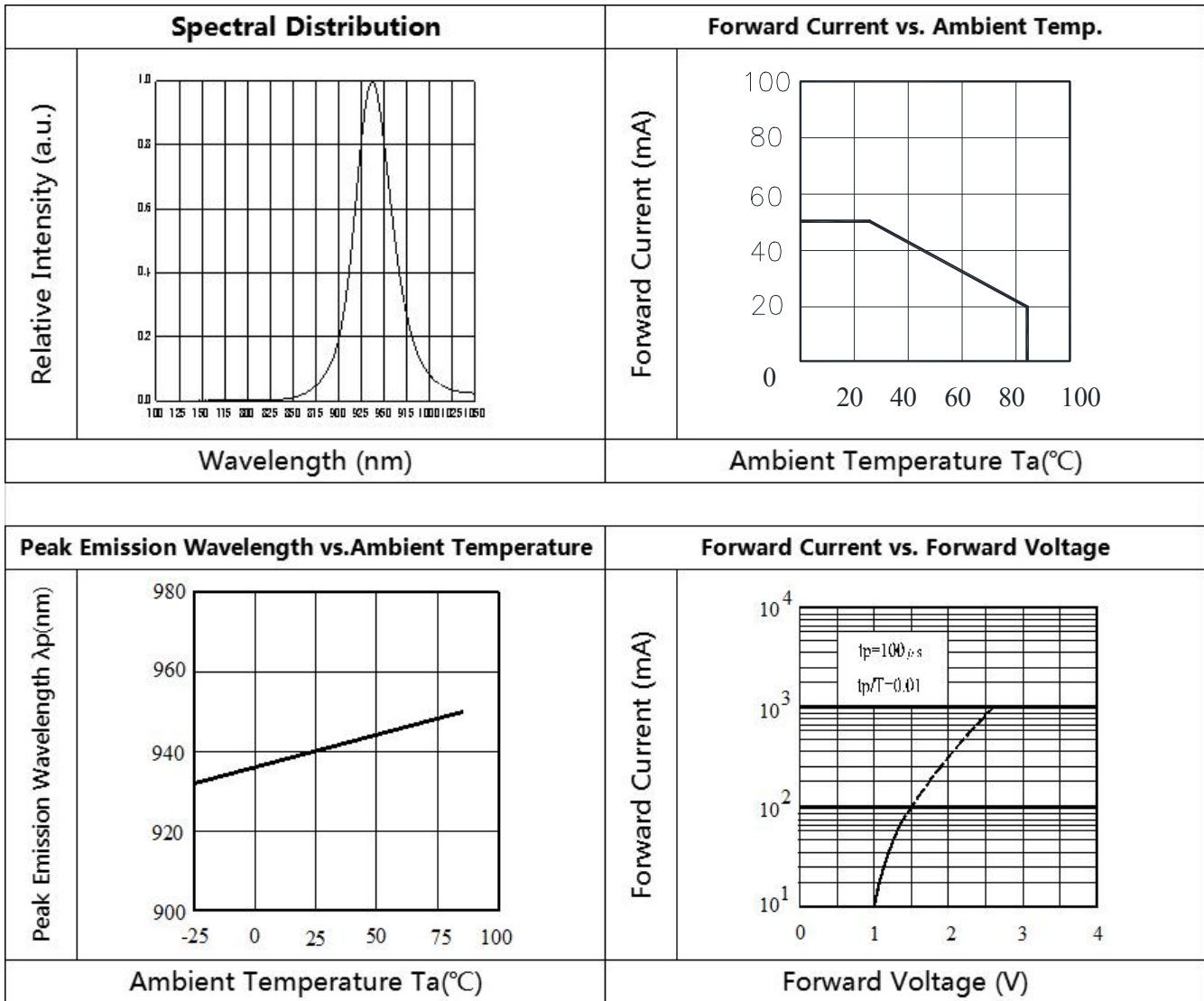
Official Product	HV-21S140100/S11C	Customer Part No.		Data Sheet No.
	*****	*****		CDAE-050-028
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.11 2019	Version of 1.1	Page 5/11

Electrical and Optical Characteristic

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Emitter	Forward Voltage	V_F	$I_F=20\text{ mA}$	/	1.2	1.5	V
	Reverse Current	I_R	$V_R=5\text{ V}$	/	/	10	μA
	Peak Wavelength	λ_p	$I_F=20\text{ mA}$	930	940	/	nm
Receiver	Dark Current	I_d	$V_{CE}=20\text{V}$	/	/	100	nA
	C-E Saturation	$V_{ce(sat)}$	$I_C=0.5\text{mA}$ $I_F=20\text{ mA}$	/	/	0.4	V
Transfer Characteristics	Collect Current	$I_{C(ON)}$	$V_{CE}=5\text{V}$ $I_F=20\text{ mA}$	0.5	/	/	mA
	Rise time	T_r	$V_{CE}=5\text{V}$ $I_C=1\text{mA}$ $R_L=1\text{K}\ \Omega$	/	15	/	$\mu\text{ sec}$
	Fall time	T_f		/	15	/	$\mu\text{ sec}$

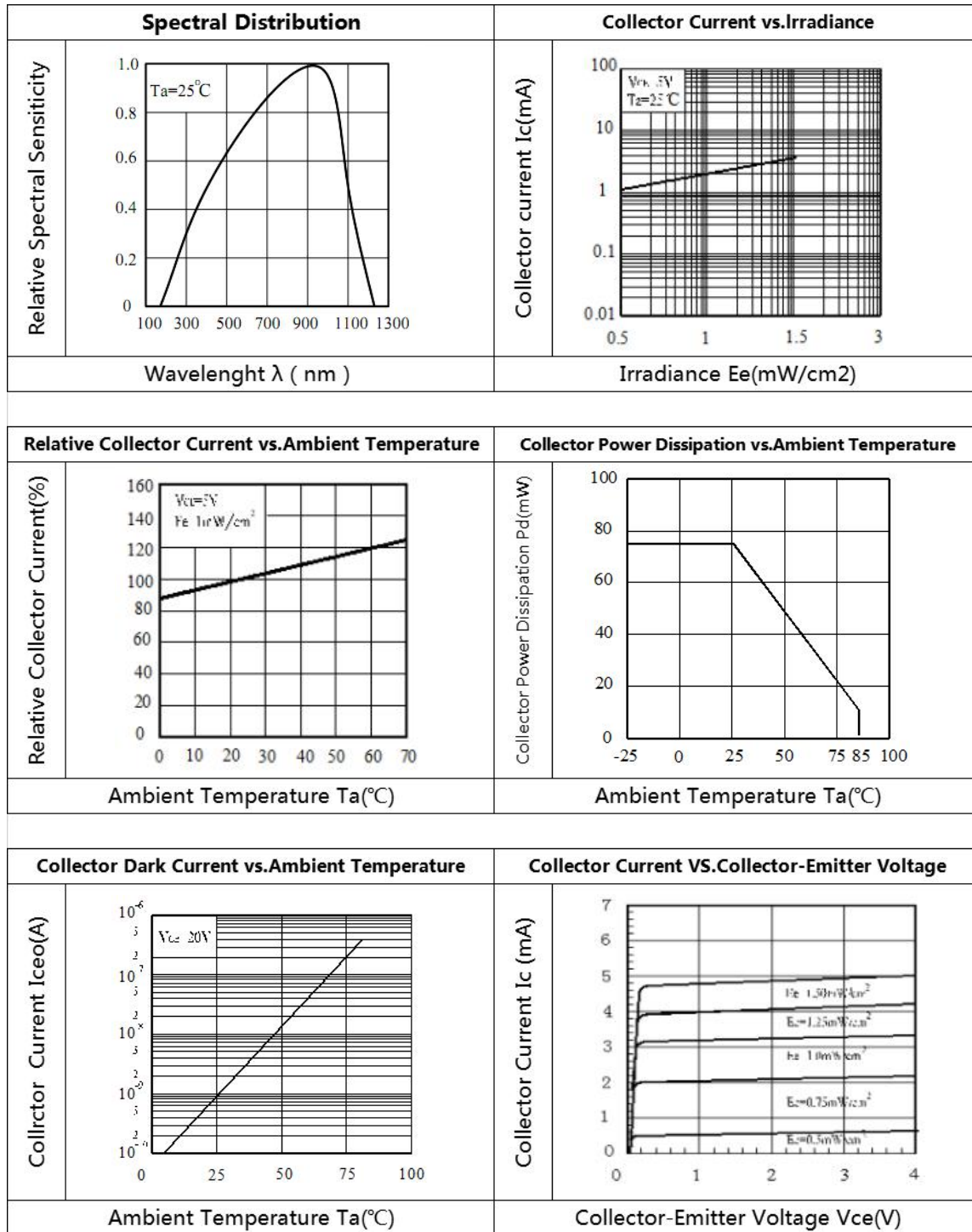
Official Product	HV-21S140100/S11C	Customer Part No.		Data Sheet No.
	*****	*****		CDAE-050-028
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.11 2019	Version of 1.1	Page 6/11

Typical Electro-Optical Characteristics Curves For IR



Official Product	HV-21S140100/S11C	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-050-028
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.11 2019	Version of 1.1
			Page 7/11

Typical Electro-Optical Characteristics Curves For PT



Official Product	HV-21S140100/S11C	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-050-028
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.11 2019	Version of 1.1
			Page 8/11

Reliability test items and conditions:

The reliability of products shall be satisfied with items listed below.

Confidence level: 97%

LTPD:3%

No	Item	Test Conditions	Test Hours/Cycle	Sample Size	Failure Judgment Criteria	Ac/Er
1	Solder Heat	TEMP:260°C±5°C	10 SEC	76 PCS	$I_v \leq I_{vt} * 0.5$ or $V_f \geq U$ or $V_f \leq L$	0/1
2	Temperature Cycle	H:+100°C 15min ∫ 5min L:-40°C 15min	300 CYCLES	76 PCS		0/1
3	Thermal Shock	H:+100°C 5min ∫ 10sec L:-10°C 5min	300 CYCLES	76 PCS		0/1
4	High Temperature Storage	TEMP:100°C	1000 HRS	76 PCS		0/1
5	Low Temperature Storage	TEMP:-40°C	1000 HRS	76 PCS		0/1
6	DC Operating Life	TEMP:25°C IF=20mA	1000 HRS	76 PCS		0/1
7	High Temperature / High Humidity	85°C/85%RH	1000 HRS	76 PCS		0/1

Note: I_{vt} : To test I_v value of the chip before the reliability test.

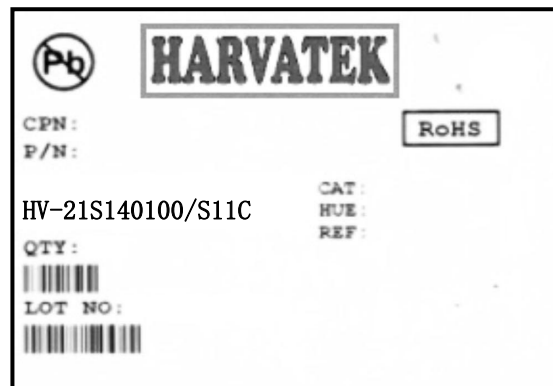
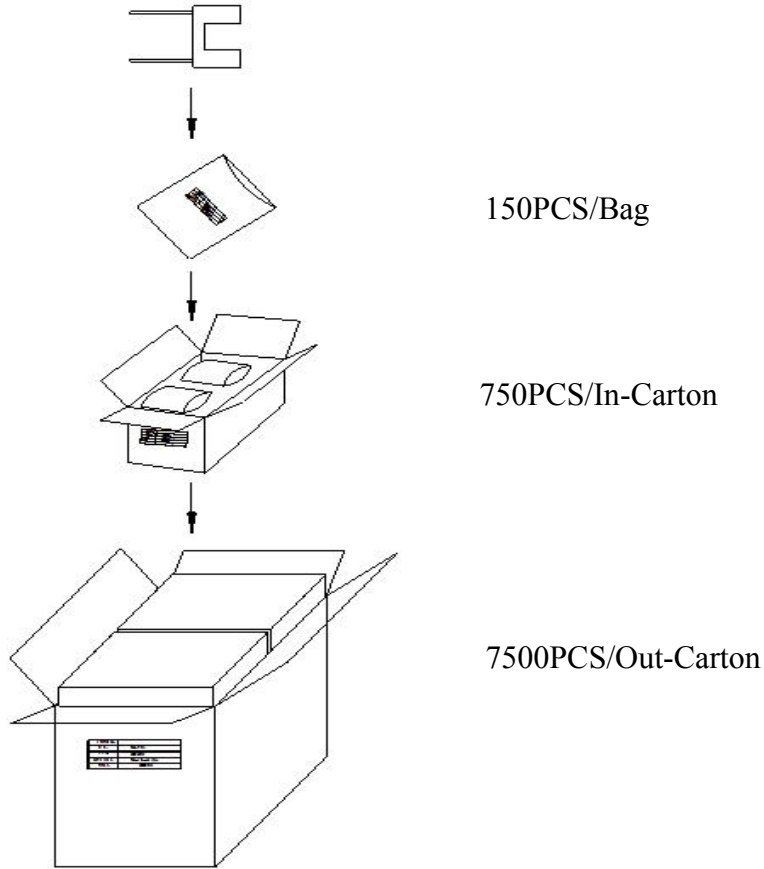
I_v : The test value of the chip that has completed the reliability test

U: Upper Specification Limit

L: Lower Specification Limit

Official Product	HV-21S140100/S11C	Customer Part No.		Data Sheet No.
	*****	*****		CDAE-050-028
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.11 2019	Version of 1.1	Page 9/11

Packing Specification:



Official Product	HV-21S140100/S11C	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-050-028
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.11 2019	Version of 1.1
			Page 10/11

Revision History

Revision	Page	Version No.	Revision Date
Initial Release		1.0	08-08-2018
Modifies Electrical and Optical Characteristic	6	1.1	11-11-2019

Official Product	HV-21S140100/S11C	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-050-028
Specifications are subject to change without notice. Data and drawings herein are copyrighted.	Nov.11 2019	Version of 1.1	Page 11/11