



ANYNET SECURE SIM CARD ES56XX

Eseye's family of ES56xx SIM cards are designed to allow IoT devices global connectivity access through mobile networks. A single SKU permits a device to deploy in all territories supported by the modem in use.

Features

- GSMA compliant
- Extended temperature range
- Storage for application security parameters
- Multi-IMSI

Applications

- 2G, 3G or 4G/LTE IoT devices
- Cat M1 LTE IoT modems
- Security
- Vending
- EV charge point
- Critical infrastructure monitoring
- Point of Sale terminals
- Cloud connected
- Edge processing devices
- Connected consumer applications

Device Information

AnyNet Secure SIM card	Package
ES561x	2FF/3FF
ES562x	MFF2
ES563x	2FF/3FF/4FF

Operating Parameters

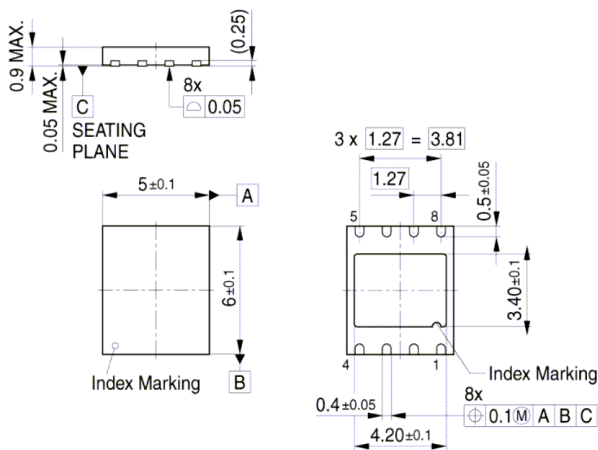
	ES561x	ES562x	ES563x
Minimum operating temperature (°C)	-40	-40	-25
Maximum operating temperature (°C)	+105	+105	+85
Minimum storage temperature (°C)	-40	-40	-40
Maximum storage temperature (°C)	+105	+105	+85
Minimum operating voltage (V)	1.62	1.62	1.62
Maximum operating voltage (V)	5.5	5.5	5.5
Plastic type	ABS 10	n/a	ABS 8
NV memory	64K	64K	128k
Write / erase time (ms)	2.3 ms	2.3 ms	4ms
Data retention time at 85°C (years)	10 years	10 years	10 years
Write cycles per file	> 4 M	> 4 M	> 500000

Pin Definitions

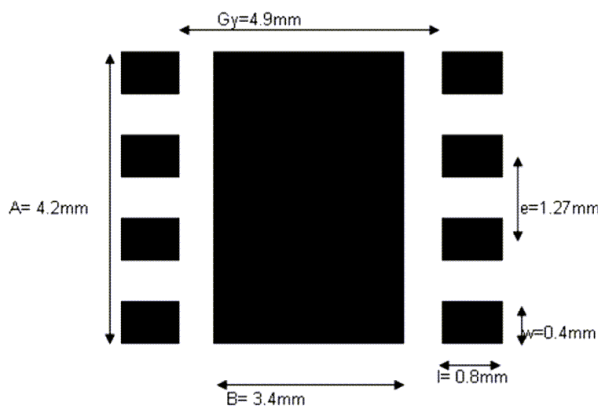
Pin name	Description	ES561x	ES562x	ES563x
VCC	Card Power	1	8	1
Reset	Card Reset (Optional)	2	7	2
CLOCK	Card Clock	3	6	3
GND	Ground	4	1	4
VPP	Programming	5		5
I/O	In/Out [Data]	6	3	6

ES562x package outline and footprint

MFF2 6x5mm, 1.27mm pitch - package outline



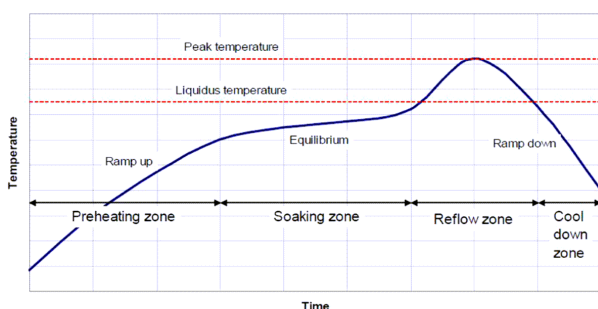
- **Package thickness:** ≤ 1.0 mm
- **Exposed metal heat feature (die pad):** either electrically connected internally to ground, or it is not electrically connected within the package
- **Index marking on exposed metal heat feature:** located at the terminal 1 corner
- **Index marking on topside:** located at the terminal 1 corner
- **Electrical handling of the JEDEC Terminals:** defined in ETSI TS 102 221



A,B :Max size of thermal pad on PCB
 e :Pad pitch
 Gy :Pad gap
 l & w :Perimeter pad size on PCB

ES562x reflow temperature profile

General forced convection reflow profile for soldering QFN packages:



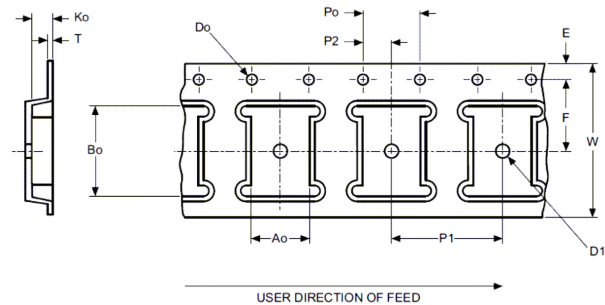
ES562x packaging information

Typically, the carrier tape is constructed from a polystyrene (PS) or PS-laminate film.

Uniform film thickness: 0.2mm to 0.4mm, depending on the size and weight of the component carried by the tape

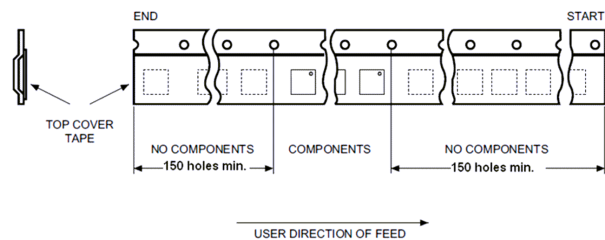
Minimum trailer length: 160mm

Minimum leader length: 400mm



Package: MFF2

Label	(mm)	Label	(mm)	Label	(mm)
Ao	5.3 ±0.1	Ko	1.2 ±0.1	E	1.75 ±0.1
Bo	6.3 ±0.1	Po	4 ±0.1	F	5.5 ±0.1
Do	1.55 ±0.05	P1	8 ±0.1	W	12 ±0.3
D1 (min.)	1.5 ±0.1	P2	2 ±0.1	T (max.)	0.3 ±0.05

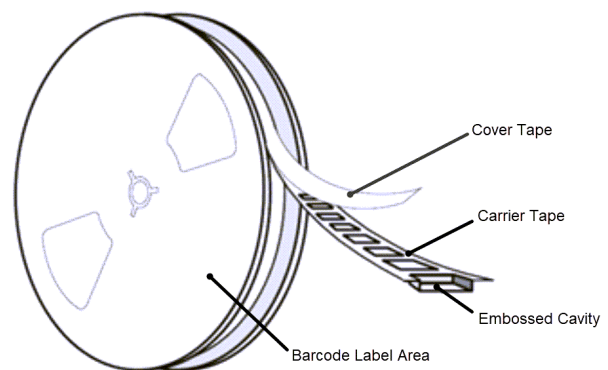


Tape and reel packing

Surface-mount packages are supplied with tape and reel packing.

The complete configuration consists of:

- A carrier tape with sequential individual cavities that hold individual components
- A cover tape that seals the carrier tape to retain the components in the cavities



Materials used

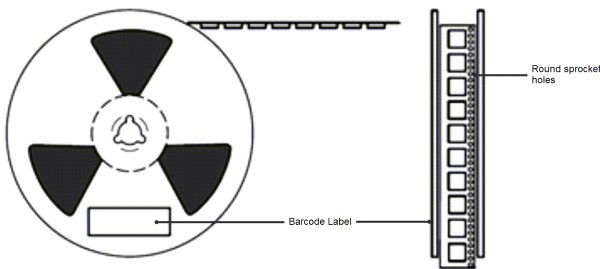
- Reels are plastic, either antistatic or conductive, with a black conductive cavity tape
- The cover tape is transparent, either antistatic or conductive
- Reels that contain the sealed carrier tape are polystyrene (PS)
- Reels can have one, two or three parts
- Typically reels are blue or black, but other colours are acceptable
- The reels are recyclable and customers can receive new or recycled reels (in all cases, recycled reels are required to conform to drawing specifications)

Tape and reel configuration

The tape and reel configuration is designed for:

- All surface-mount technology (SMT) packages, providing component lead isolation during shipping, storage, handling and processing
- Transport and storage from the supplier of the electronic components to the customer
- Use in the customer manufacturing plant
- Feeding components to automatic-placement machines for surface mounting on board assemblies

Device position



The devices are positioned in the cavities with pin #1 (index) on the same side as the sprocket holes in the tape.

Tape and reel are compliant to the EIA 481-A standard specification.

Reel detail

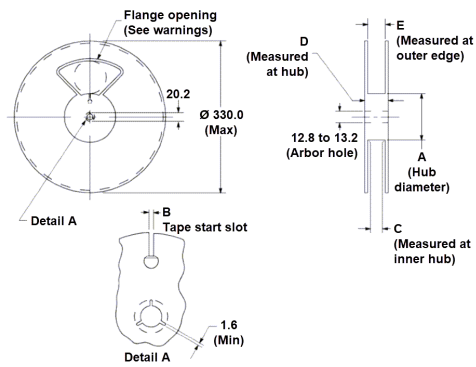
Reel size	Units supported per reel
330mm (13")	Up to 1000
178mm (7")	Up to 500

Reel dimensions are defined by the following standards:

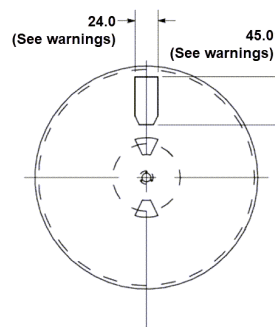
- EIA-481-1
- EIA-481-2
- EIA-481-3

! All reels must have a flat label placement area on the front flange of the reel that will fit labels.

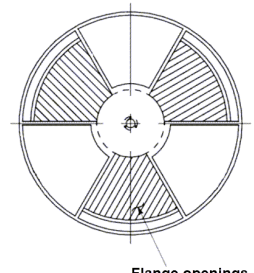
! Flange opening on the front and the back of the reel are a supplier option, but must meet the label placement area requirement.



Reel diameter	Tape size	A		B		C		D	E
		Min	Max	Min	Max	Min	Max	(Max)	(Max)
330.0	12	178.0		4.5	5.5	12.4	14.4	18.4	15.4
178.0		50.0							



Front view of 178mm (7.0") reel



Front view of 330mm (12.99") reel

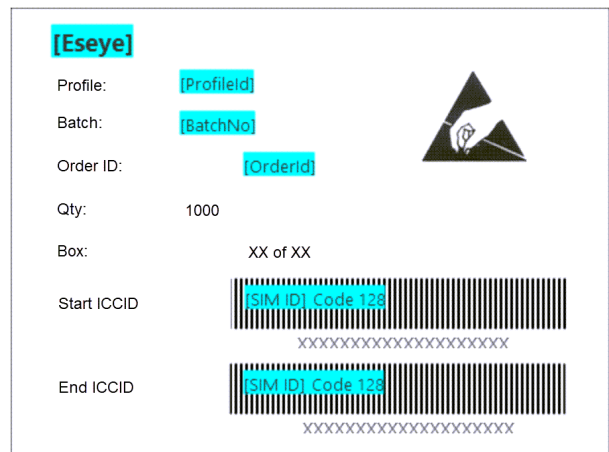
ES562x reel labels

Format: 89 x 48 mm

Material: white, permanent glue

Inner box label position: Top left corner

Reel label position: Between two windows of the reel



Ordering Information

AnyNet Secure SIM card	Package	Description
ES561x	2FF/3FF	AnyNet Secure SIM Dual Cut
ES562x	MFF2	Embedded AnyNet Secure SIM
ES563x	2FF/3FF/4FF	AnyNet Secure SIM Triple Cut