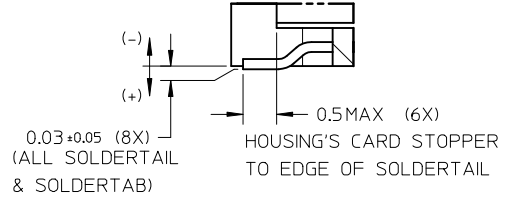
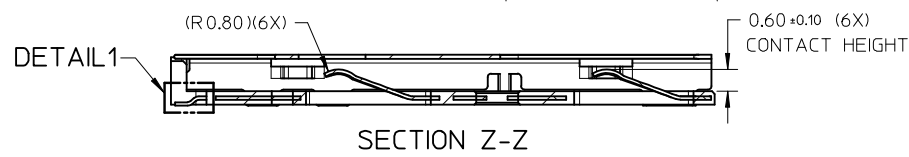
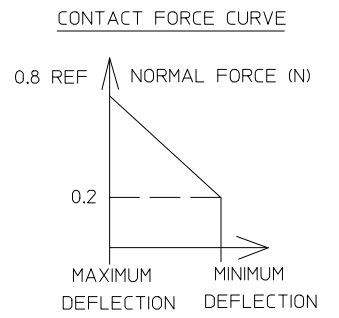
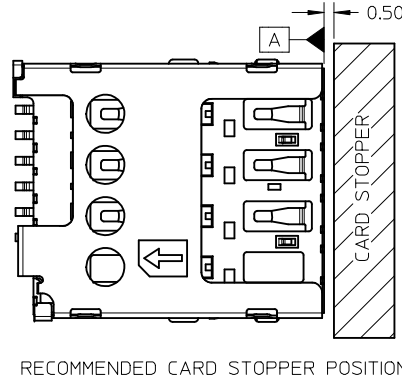
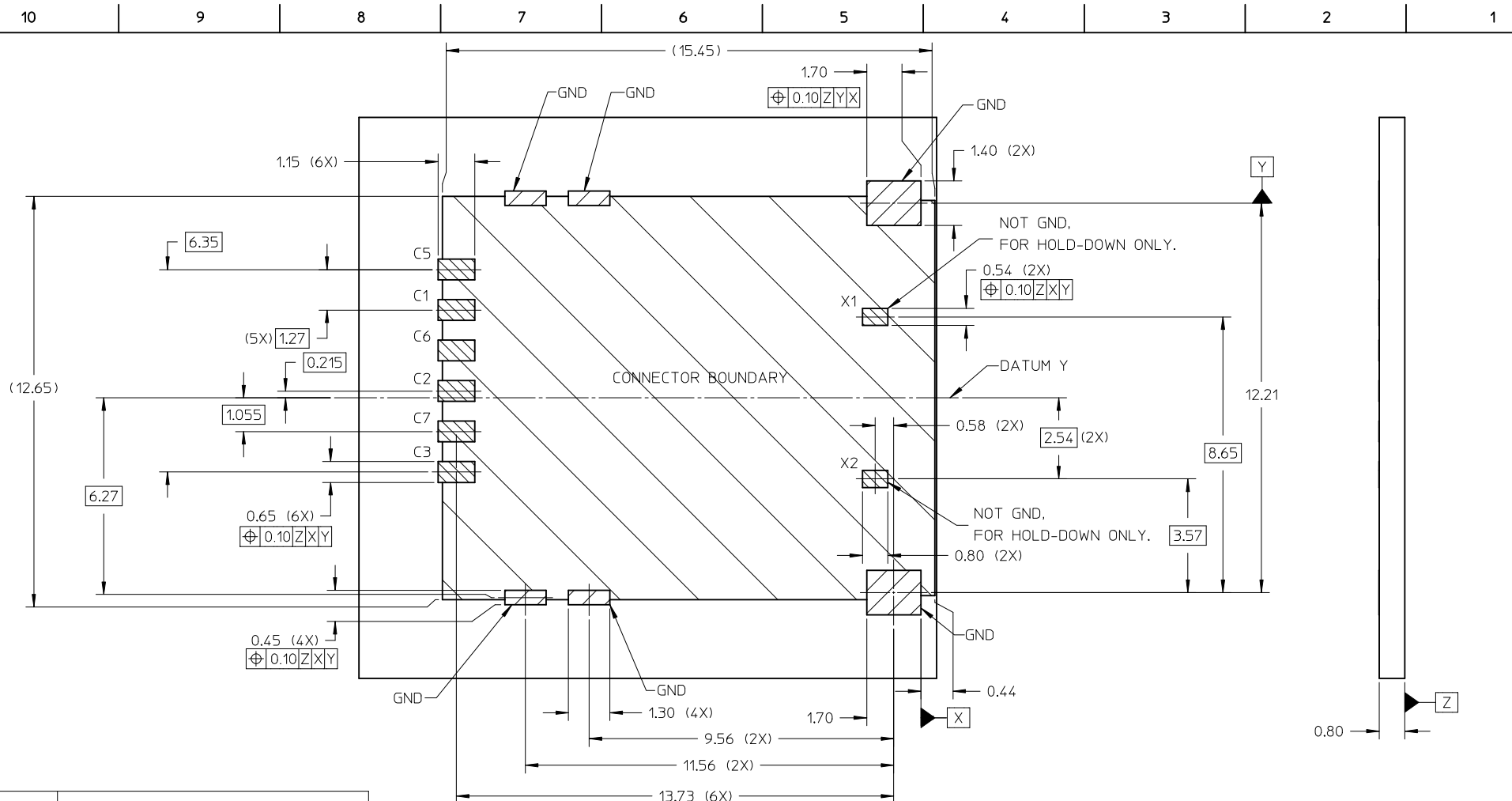


- NOTE:
- MATERIAL: HOUSING : LIQUID CRYSTAL POLYMER (LCP), GLASS FILLED, UL94-V0, COLOR: BLACK  
TERMINAL : COPPER ALLOY  
METAL SHELL : STAINLESS STEEL
  - FINISH:  
TERMINAL:-  
CONTACT : SEE TABLE.  
SOLDERTAIL: 1.27µM MIN. MATTE TIN OVER 1.27µM NICKEL UNDERPLATE.  
SHELL :-  
SOLDERTAB : 1.27µM MIN. MATTE TIN OVER 1.27µM NICKEL UNDERPLATE.  
TOP SURFACE : MATTE TIN OVER 1.27µM NICKEL UNDERPLATE.
  - OVERALL (SOLDERTAIL & SOLDERTAB) COPLANARITY 0.08MM, MAX.
  - ALLOWABLE SIM CARD SLIDE OUT W.R.T. DATUM A : 1.00MM MAX.
  - PRODUCT SPECIFICATION: PS-78646-001
  - PACKAGING SPECIFICATION: RPK-78646-001
  - COMPLIANT TO RoHS DIRECTIVE 2011/65/EU AND ELV DIRECTIVE 2000/53/EC.
  - DATE CODE: YYDD XX  
YEAR ——— LINE 1/2/3  
DAY ——— SHIFT: D - DAY  
N - NIGHT
  - VERSION NO: V1.3



DETAIL1	
PART NO.	PLATING AT CONTACT
786460001	0.76µM MIN. GOLD OVER 1.27µM NICKEL UNDERPLATE.
786463001	0.38µM MIN. GOLD OVER 1.27µM NICKEL UNDERPLATE.

<b>REV NOTES</b> EC NO: S2015-1424 DRWN:JTAN02 2015/06/09 CH'KD:SCHEONG 2015/06/10 APPR:KHLIM 2015/06/12	<b>QUALITY SYMBOLS</b> $F_{\Delta}=0$ $F_{\Delta}=0$ $F_{\Delta}=0$	<b>GENERAL TOLERANCES (UNLESS SPECIFIED)</b>		<b>DIMENSION STYLE</b> MM ONLY		SCALE NTS	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION																					
		<table border="1"> <thead> <tr> <th></th> <th>mm</th> <th>INCH</th> </tr> </thead> <tbody> <tr> <td>4 PLACES</td> <td>± ---</td> <td>± ---</td> </tr> <tr> <td>3 PLACES</td> <td>± ---</td> <td>± ---</td> </tr> <tr> <td>2 PLACES</td> <td>± 0.20</td> <td>± ---</td> </tr> <tr> <td>1 PLACE</td> <td>± ---</td> <td>± ---</td> </tr> <tr> <td>0 PLACE</td> <td>±</td> <td>±</td> </tr> </tbody> </table>			mm	INCH	4 PLACES	± ---	± ---	3 PLACES	± ---	± ---	2 PLACES	± 0.20	± ---	1 PLACE	± ---	± ---	0 PLACE	±	±	DRAWN BY: JTAN02 DATE: 2011/02/24		TITLE: SALES DRAWING MICRO SIM CONNECTOR 1.45MM HEIGHT, PUSH PULL		<b>molex</b>			
			mm	INCH																									
		4 PLACES	± ---	± ---																									
3 PLACES	± ---	± ---																											
2 PLACES	± 0.20	± ---																											
1 PLACE	± ---	± ---																											
0 PLACE	±	±																											
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		ANGULAR ± 3°		CHECKED BY: FCS00 DATE: 2011/03/15		APPROVED BY: KHLIM DATE: 2011/03/16		DOCUMENT NO.: SD-78646-001		SHEET NO.: 1 OF 3																			
		SEE TABLE		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION																									



RECOMMENDED PCB LAYOUT  
 PWB TOLERANCE : ±0.05MM

PIN NO.	ASSIGNMENT
C1	Vcc (SUPPLY VOLTAGE)
C2	RST (RESET SIGNAL)
C3	CLK (CLOCK SIGNAL)
C5	GND
C6	Vpp (VARIABLE SUPPLY VOLTAGE)
C7	I/O (DATA INPUT/OUTPUT)
X1	NOT GND, FOR HOLD DOWN ONLY. (NOTE:X1 IS LINKED TO C1)
X2	NOT GND, FOR HOLD DOWN ONLY. (NOTE:X2 IS LINKED TO C3)

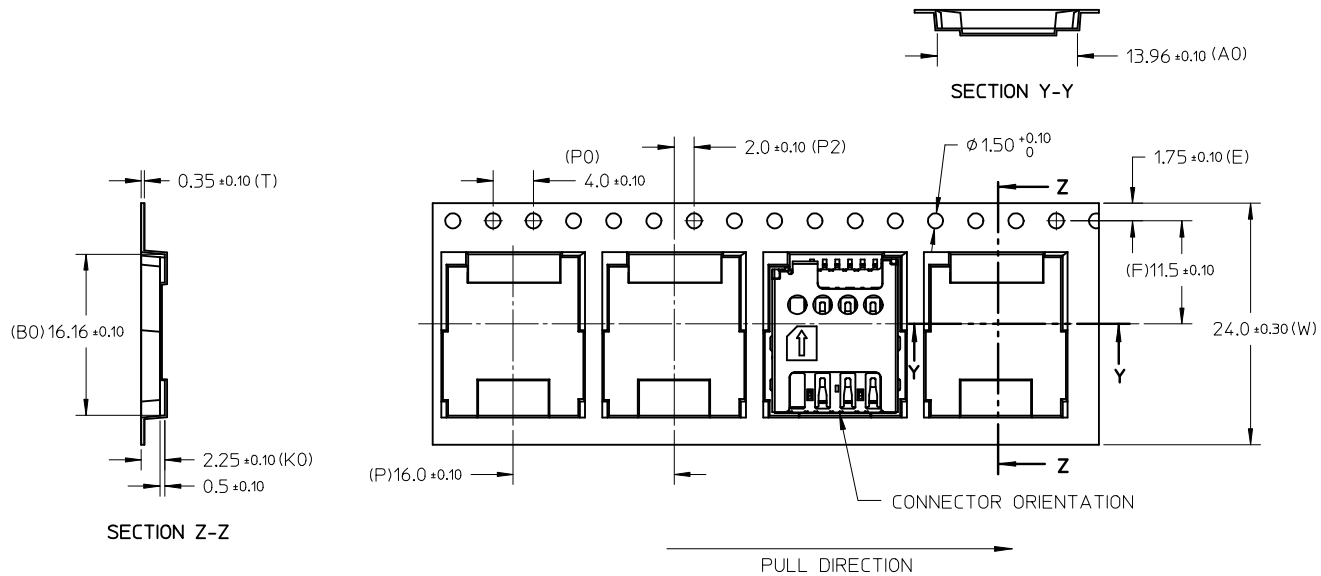
REV NOTES  
 EC NO: S2015-1424  
 DRWN: JTAN02 2015/06/09  
 CHN: CHYKDS/SCHEONG 2015/06/10  
 APPR: KHL IM 2015/06/12

QUALITY SYMBOLS	GENERAL TOLERANCES (UNLESS SPECIFIED)	
	mm	INCH
$F_A=0$	4 PLACES ± ---	± ---
$F_C=0$	3 PLACES ± ---	± ---
$F_P=0$	2 PLACES ± 0.20	± ---
	1 PLACE ± ---	± ---
	0 PLACE ±	±

ANGULAR ± 3°  
 DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

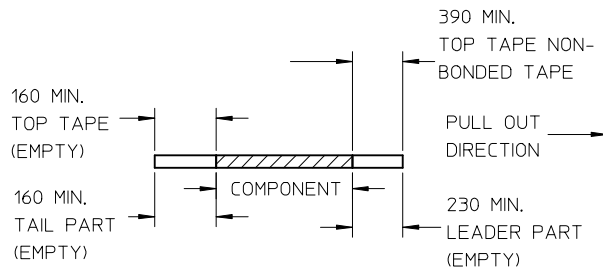
DIMENSION STYLE		SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION
MM ONLY		NTS	METRIC	
DRAWN BY	DATE	TITLE		
JTAN02	2011/02/24	SALES DRAWING		
CHECKED BY	DATE	MICRO SIM CONNECTOR		
FCS00	2011/03/15	1.45MM HEIGHT, PUSH PULL		
APPROVED BY	DATE	<b>molex</b>		
KHL IM	2011/03/16			
MATERIAL NO.	DOCUMENT NO.	SD-78646-001		
SIZE	THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION			
A3				

PACKAGING INFORMATION

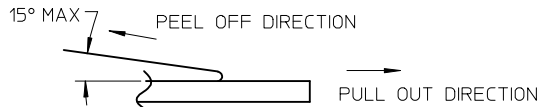


PULL OUT DIRECTION

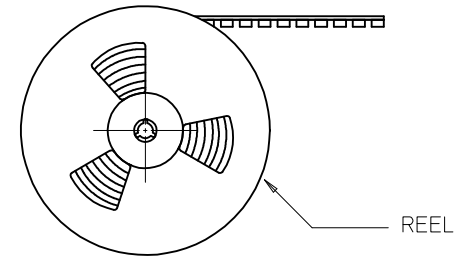
NOTES :  
 1. LEADER & TRAILER TAPE



2. PEELING OFF FORCE OF THE TOP TAPE : 20-80gf.  
 (PEELING DIRECTION AS SHOWN IN THE FOLLOWING FIGURE)



3. TAPE & REEL SPECIFICATION IS AS PER EIA-481.  
 4. TAPE & REEL QTY. : 1500PCS / REEL.  
 5. THE TAPE IS TREATED FOR ANTI-STATIC.



<b>REV NOTES</b> EC NO: S2015-1424 DRWN: JTAN02 2015/06/09 CHKD: SCHEONG 2015/06/10 APPR: KHLIM 2015/06/12	QUALITY SYMBOLS	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE	SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION
	$\nabla_{\text{A}}=0$	mm	INCH	MM ONLY	NTS	METRIC	
	$\nabla_{\text{B}}=0$	4 PLACES ± --- ± ---	3 PLACES ± --- ± ---	DRAWN BY JTAN02	DATE 2011/02/24	TITLE	
	$\nabla_{\text{C}}=0$	2 PLACES ± 0.20 ± ---	1 PLACE ± --- ± ---	CHECKED BY FCS00	DATE 2011/03/15	SALES DRAWING MICRO SIM CONNECTOR 1.45MM HEIGHT, PUSH PULL	
	0 PLACE ± ±	ANGULAR ± 3°		APPROVED BY KHLIM	DATE 2011/03/16		
		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		MATERIAL NO.	DOCUMENT NO.	SHEET NO.	
B3		SEE TABLE		SD-78646-001		3 OF 3	
		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION					



## Optimize space savings with highly compact and reliable hinged and push-pull style micro-SIM card sockets for ultra-slim mobile devices

Molex has added a 1.40mm height, hinged socket (series 78800) to its array of push-pull style micro-SIM card interconnects (series 78723, 78727, 78646). This low-profile socket is ideal for ultraslim smartphones with limited vertical space between SIM socket and the phone battery-cover. Maximizing space savings and facilitating easy, top-loading of SIM card, the socket is the designer's choice for mid-board layouts that preclude the use of front- or side-entry style sockets. Measuring only 16.96 (L) by 13.69 (W) by 1.40mm (H), the socket is more compact than competing equivalents.

The socket's U-shaped metal hinge provides high pulling force between lid and shell to ensure robust card retention, electrical contact and reliability. A uniquely designed locking mechanism allows a partial tilt of the lid into lock position; or full opening at 180-degrees to the horizontal, for easy removal and placement of SIM card.

Molex's push-pull style micro-SIM card sockets come with anti-shortening, card polarization and other features for high user- and electrical reliability. Integral solder tabs on the socket shells provide robust PCB hold-down during soldering. Insert-molded LCP housings maintain design and dimension precisions while sustaining high-temperature operations.

The socket terminals of this family have rounded profiles to facilitate smooth card insertion and withdrawal. Aligned in reverse direction, the terminals prevent contact stubbing and allow gradual 'lead-in' of the SIM card when inserted. This unique terminal geometry ensures high contact integrity and connectivity when mated.

Molex's hinged and push-pull style sockets come in standard 6-circuit configuration. Customers can request for 8-circuit push-pull style sockets if needed. Parts are shipped in tape-on-reel packaging. All Molex micro-SIM sockets featured in this release are halogen-free, ELV- and RoHS-compliant for environmental sustainability.

For more information, visit our website at: [www.molex.com/link/micro-sim.html](http://www.molex.com/link/micro-sim.html)

### Features and Benefits

Ultra-low-profile height of 1.35mm (78723), 1.40mm (78727 and 78800)	Ideal for ultra-slim smart phone applications
Card polarization features (all series)	Ensure correct card orientation when used with socket
Top-loading style socket allowing 180-degree opening of lid (78800)	Eliminates any possibility of terminal crush as the SIM card is mounted top-down
Anti-short feature using raised housing walls of the socket (78723, 78727) and kinked shell design (78646)	Prevents shorting of any exposed edge of (improperly pared) SIM card contact pads with the surrounding metal shell
Integral metal-shell spring tab (78723)	Ensures high normal force (0.30N) and good electrical contact with inserted micro-SIM card
Detect Switch with First-Mate-Last-Break capability (78727)	Enables detection of micro-SIM card when inserted

## micro-SIM Card Sockets, 6-Circuit, Halogen-free, Lead-free 1.40mm Hinged and 1.35, 1.40 and 1.45mm Height Push-Pull Styles

### Hinged style

**78800** 1.40mm Height, without detect switch

### Push-pull style

**78723** 1.35mm Height, without detect switch

**78727** 1.40mm Height, with detect switch

**78646** 1.45mm Height, without detect switch



Hinged and Push-Pull Style Micro-SIM Card Sockets, Halogen-free, Lead-free

## Specifications

### Reference Information

Packaging: Embossed Tape on Reel  
 Use With: micro-SIM card  
 Designed In: mm  
 RoHS: Yes  
 Halogen Free: Yes  
 Glow Wire Compliant: No

### Electrical

Voltage (max.):  
 5V DC (78723, 78800), 10V DC (78727), 15V DC (78646)  
 Current (max.): 0.5A per contact  
 Low Level Contact Resistance (max.): 100 milliohms  
 Dielectric Withstanding Voltage: 500 VAC  
 Insulation Resistance (min.): 1000 megaohms

### Mechanical

Contact Normal Force (min.):  
 0.30N (78723 and 78727)  
 0.20N at min. deflection (78646)  
 0.20N at 0.32mm working height (78800)  
 Lock/Unlock Force (with and without card): 15N max./0.5N min. respectively

Contact Normal Force : 0.20N(min.); 1.30N(max.) (78800)  
 Card Insertion Force (max.): 8N (78723), 10N (78727)  
 Card Withdrawal Force (min.): 0.7N (78723), 0.5N (78727)  
 Durability (max.):  
 500 cycles at 100 milliohms (78723 and 78727)  
 1500 cycles at 100 milliohms (78646)  
 5,000 cycles at 100 milliohms LLCR and 0.20N Contact Normal Force (78800)  
 500 cycles at 100 milliohms LLCR with 15N (max.) Locking Force and 0.50N (min.) Unlocking Force (78800)

### Physical

Housing: LCP (glass-filled), UL94V-0, Black  
 Contact: Phosphor Bronze (78800) Copper Alloy (others)  
 Metal Shell: Stainless Steel (no plating for Series 78800)

## micro-SIM Card Sockets, 6-Circuit, Halogen-free, Lead-free 1.40mm Hinged and 1.35, 1.40 and 1.45mm Height Push-Pull Styles

### Plating:

Contact Area — 0.38 $\mu$ m (15 $\mu$ " ) Gold (Au)  
 Solder Tail — 1.27 $\mu$ m (50 $\mu$ " ) Matte Tin (Sn)  
 Underplating — 1.27 $\mu$ m (50 $\mu$ " ) Nickel (Ni)

### Shell Solder Tab:

1.27 $\mu$ m (50 $\mu$ " ) Matte Tin (Sn) over 1.27 $\mu$ m (50 $\mu$ " ) Nickel (Ni) underplate

### Detect Contact:

0.127 $\mu$ m (5 $\mu$ " ) Gold (Au) over 1.27 $\mu$ m (50 $\mu$ " ) Nickel (Ni) underplate (78727)

### Detect Spring:

0.127 $\mu$ m (5 $\mu$ " ) Gold (Au) over 1.27 $\mu$ m (50 $\mu$ " ) Nickel (Ni) underplate (78727)

### Operating Temperature:

-40 to +85°C (78723 and 78727)  
 -30 to +85°C (78646 and 78800)

## Product Family



1.40mm height push-pull style micro-SIM card socket with detect switch (Series 78727)



1.40mm height, hinged style micro-SIM card socket (Series 78800)



1.45mm height push-pull style micro-SIM card socket (Series 78646)



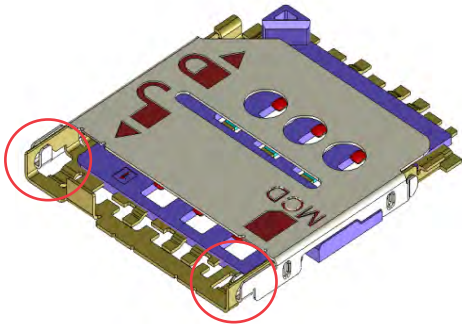
1.35mm height, push-pull style micro-SIM card socket (Series 78723)



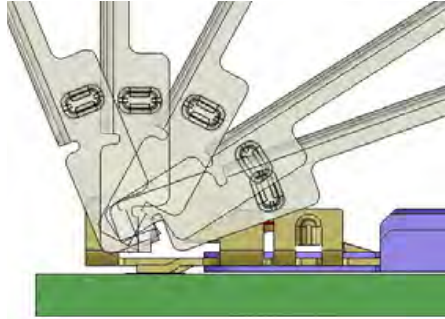
### Product Features – Hinge Style Locking

A “U” shape metal hinge provides high pulling force between the lid and shell body, preventing the lid from being pulled out accidentally

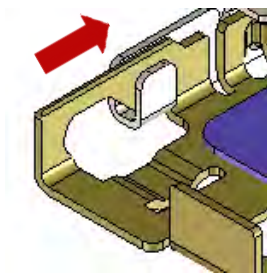
**micro-SIM Card Sockets, 6-Circuit, Halogen-free, Lead-free  
1.40mm Hinged and 1.35, 1.40 and 1.45mm Height Push-Pull Styles**



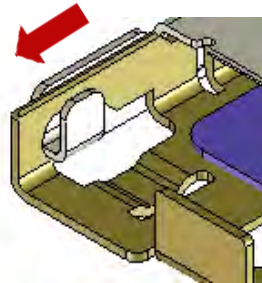
Socket hinges (highlight)



Backward rotation of socket hinge at housing frame keyhole enabling full 180-degree lid tilt

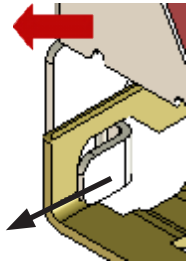


Hinge is locked



Hinge is unlocked

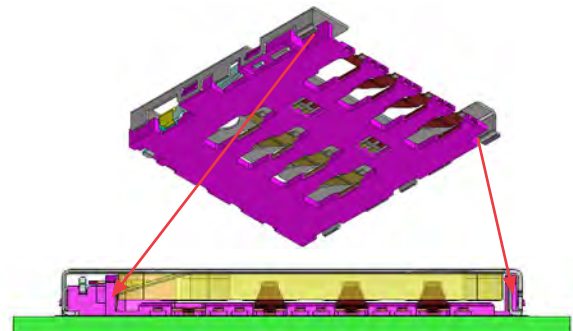
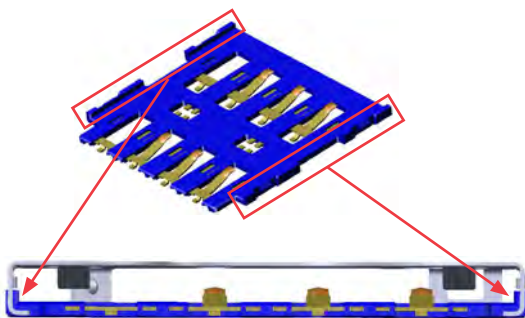
The tip of the hinge now faces outwards to allow lid to open partially or fully (Remark: Product photo on datasheet cover page shows partially opened lid in 'lock' position)



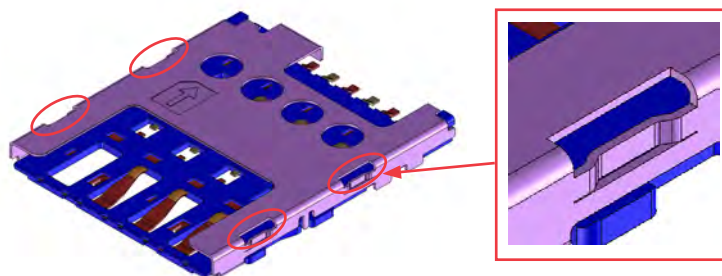
Hinge rotates backwards to open lid

### Hinge features of Series 78800 micro-SIM card socket

### Anti-Shorting Features of Series 78723, 78727, 78646 Push-Pull Style Micro-SIM Sockets



Series 78723 (left) and 78727 (right) micro-SIM card socket use raised housing-wall as anti-short feature



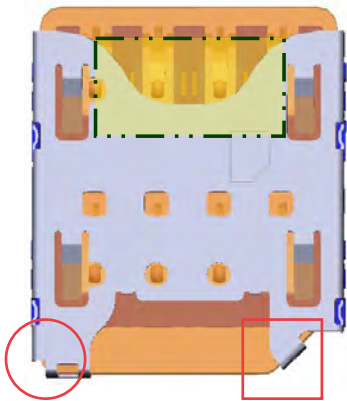
Series 78646 socket uses a kinked metal shell design as anti-short feature





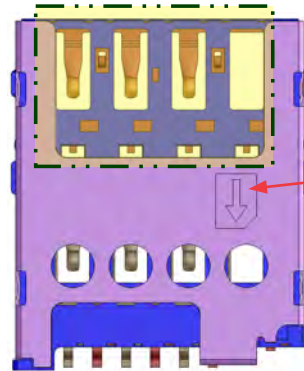
### Wide Finger Area (Yellow Boxes) and Card Polarization Features of Series 78723, 78727 and 78646 Push-Pull Micro-SIM Card Socket

**micro-SIM Card Sockets, 6-Circuit, Halogen-free, Lead-free  
1.40mm Hinged and 1.35, 1.40 and 1.45mm Height Push-Pull Styles**



Two angled-shell card-polarization features act as stoppers to ensure correct fit of micro-SIM card to socket

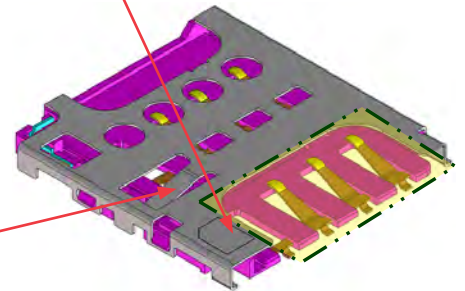
**Series 78723 micro-SIM card socket**



**Series 78646 micro-SIM card socket**

Series 78727 socket uses a card-orientation-spring to block a wrongly oriented (and inserted) micro-SIM card mid-way to prevent damage to socket

Chamfered edge icon to guide user in correct micro-SIM card insertion



**Series 78727 micro-SIM card socket**

### Other Product Features of 78723 and 78727 Micro-SIM Card Socket

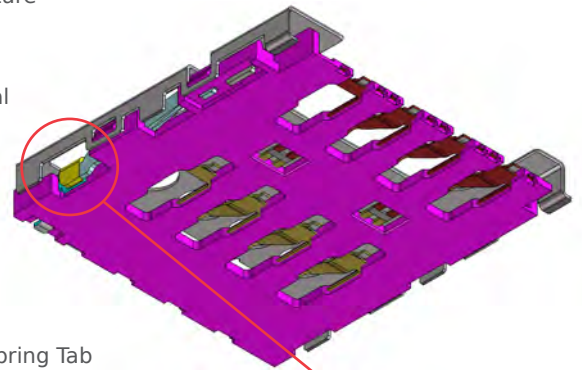


Spring tab feature

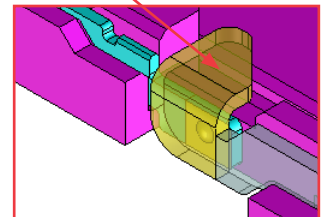
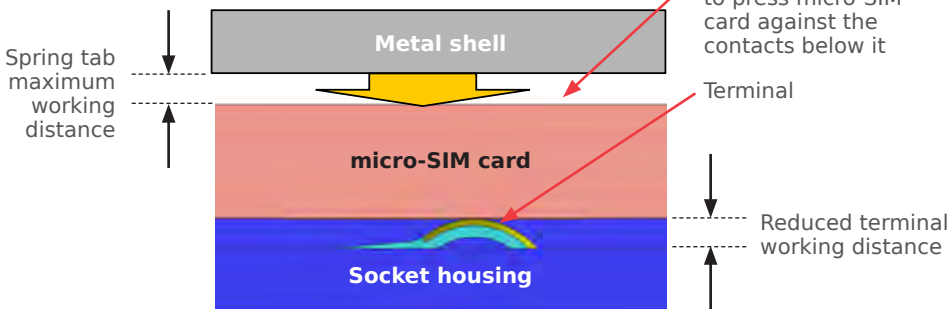
Metal shell of socket

Socket terminal

Socket housing



#### With Spring Tab



Series 78727 detect switch for First-Mate-Last-Break capability

By incorporating spring tabs, terminals of Series 78723 socket can achieve a 0.30N minimum normal force for improved card-to-socket (electrical) contact

**micro-SIM Card  
Sockets, 6-Circuit,  
Halogen-free,  
Lead-free  
1.40mm Hinged  
and 1.35, 1.40 and  
1.45mm Height  
Push-Pull Styles**

## Markets and Applications

### Consumer

- Mobile phones
- Ultra-slim smart phones
- Tablet PCs
- Mobile \*Wi-Fi devices
- \*\*GSM/UMTS modems
- PC cards
- Wireless LAN cards



GSM / UMTS modems



Tablet PCs, mobile and smart phones



Mobile Wi-Fi devices

## Ordering Information

Order No.	Profile Height	Detect Switch	Circuits
78646-3001	1.45mm	Without	6 (Please contact Global Product Manager for 8-circuit version enquiries)
78723-1001	1.35mm		
78727-0001	1.40mm	With	
78800-0001		Without	

\*Wi-Fi is a registered trademark of the Wi-Fi Alliance

\*\*GSM/UMTS - Global System for Mobile Communications / Universal Mobile Telecommunications System

[www.molex.com/link/micro-sim.html](http://www.molex.com/link/micro-sim.html)