



## Combine versatility and compatibility in ultra-slim phone and camera devices with SMIA-compliant camera sockets designed to safeguard module performance

The need to meet increased global demand for smartphones gave rise to a variety of standards, definitions and solutions proposed for camera sockets and modules. The natural result of this was compatibility issues that ranged from electrical interfaces to customized mechanics, shielding and others which made component sourcing and matching difficult.

The release of the SMIA specification effectively addressed standardization issues that made multiple sourcing and design-in faster and easier, and design cycle shorter.

Molex unveiled a class of space-saving and high reliability SMIA-compliant camera sockets to support ultra-slim mobile phone, tablet PC and vision system applications.

Available in mid- and top-mount designs, these sockets meet a variety of design requirements including lowprofile (space-constrained), single-side PCB, compact footprint and others.

Molex's SMIA-compliant sockets come with an anti-short housing wall design which prevents electrical shorting between socket terminals and its base metal shell when mated with a camera module. This feature ensures the customer's application investments are protected.

Dual locking latches along the socket walls position and secure the camera module to the socket, ensuring proper mechanical and electrical contact.

The socket's dimpled terminals feature reduced contact radius, width and area, for higher contact pressure and greater electrical reliability during mating.

A key-slot feature on the socket housing guides insertion of the camera module in the correct orientation. Each housing also has a pick-and-place zone for automated placement during assembly. Parts are packed in tape-and-reel for easy handling and loading.

For more information, visit [www.molex.com/product/camerasocket.html](http://www.molex.com/product/camerasocket.html)

## Standard Mobile Imaging Architecture (SMIA) Camera Sockets, Bottom Contact, Halogen-free, Lead-free

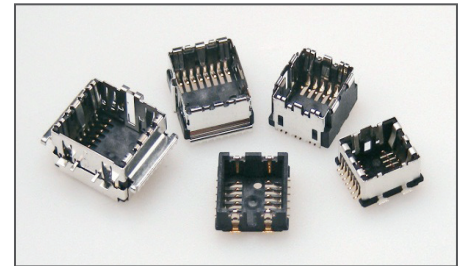
**78725** SMIA 85  
(8.5 by 8.5mm, Mid-mount)

**105190** SMIA 75  
(7.5 by 7.5mm, Top mount)

**105167** SMIA 65  
(6.5 by 6.5mm, Top-mount)

**105163** SMIA 65  
(6.5 by 6.5mm, Mid-mount)

**105200** SMIA 55  
(5.5 by 5.5mm, Mid-mount)



SMIA-compliant Camera Sockets

## Features and Benefits

SMIA-compliant sockets	Eliminate compatibility issues when used with non-standard camera modules. Enable faster and easier camera module selection by mobile phone makers using PCB-to-socket footprint matching
Anti-short housing wall design	Prevents electrical shorting between socket terminals and the base metal shell
Compact, top- and mid-mount style options	More choices for ultra-slim device applications requiring optimum space-savings
Dimpled terminal design	For added contact reliability between camera socket and module
Dual locking latches on socket	Position and secure the camera module to socket
Key-slot feature	Ensures correct orientation of camera module during insertion



## Specifications

### Reference Information

Packaging: Tape-and-reel  
Mates with: Camera modules  
Designed In: mm  
RoHS: Yes  
Halogen Free: Yes  
Glow Wire Compliant: No

### Electrical

Voltage (max.):  
10V DC (Series 78725);  
50V DC (others)  
Current (max.): 0.5A DC per contact  
Contact Resistance:  
60milliohms (78725, 105167,  
105190, 105200)  
80milliohms (105163)  
Dielectric Withstanding Voltage  
(1 min.):  
500VAC (RMS) (78725, 105190)  
150VAC (RMS)  
(105163, 105167, 105200)  
Insulation Resistance (min.):  
100 Megohm

### Mechanical

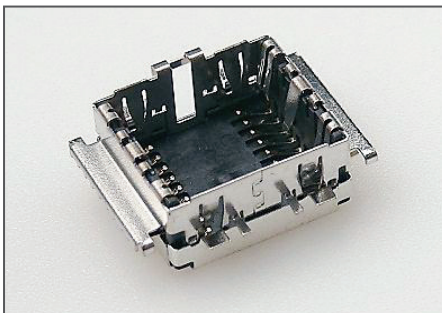
Contact Force at max. deflection of  
contact spring (max.):  
0.70N (105167, 105190)  
Contact Force at min. deflection of  
contact spring (min.):  
0.2N (78725, 105167, 105200)  
Contact Force at grounding spring (min.):  
1.0N (78725)  
Module Insertion Force (min.):  
15N (78725, 105190);  
10N (105167, 105200)  
Module Assembly Force (min.):  
30N (78725, 105190)  
Module Locking Force:  
(min.) 15N (78725, 105190,  
105200); 12N (105167)  
Socket Peeling Force (min.):  
50N (78725, 105167, 105190);  
30N (105200)  
Durability (cycles min.):  
30 (78725, 105190);  
20 (105163, 105167, 105200)

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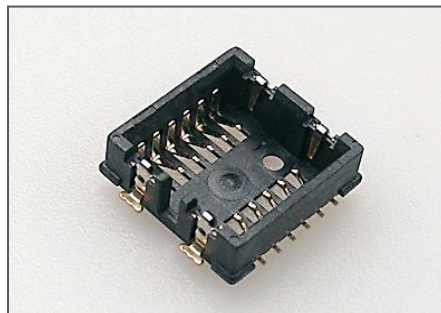
### Physical

Housing:  
High temperature thermoplastic,  
black, UL94-V0  
Contact:  
Phosphor Bronze Alloy (105190);  
Copper Alloy (others)  
Plating:  
Contact Area — 0.30 $\mu$ m (12 $\mu$ "")  
Gold (Au)  
Solder Tail Area — 0.05 $\mu$ m (2 $\mu$ "")  
Gold (Au) Flash  
Underplating — 2.0 $\mu$ m (80 $\mu$ "")  
Nickel (Ni) overall  
PCB Thickness:  
Operating Temperature:  
-30 to +85°C (78725, 105200)  
-55 to +85°C (105163, 105167,  
105190)

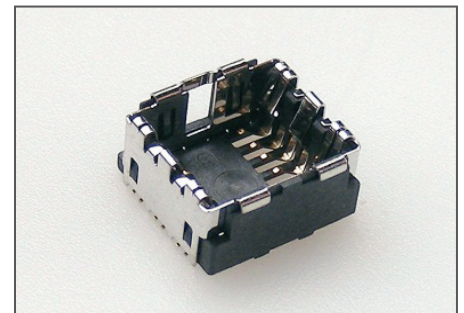
## SMIA Camera Socket Family



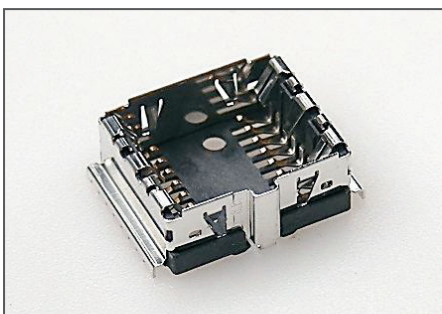
SMIA 85 (8.5 by 8.5mm, Mid-mount)  
(Series 78725)



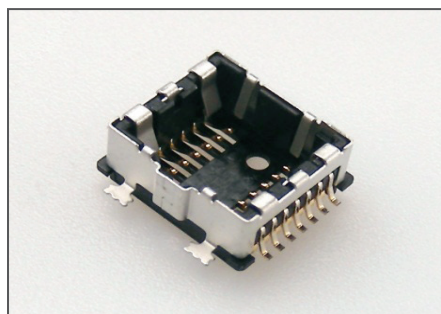
SMIA 65 (6.5 by 6.5mm, Mid-mount)  
(Series 105163)



SMIA 65 (6.5 by 6.5mm, Top-mount)  
(Series 105167)



SMIA 75 (7.5 by 7.5mm, Top-mount)  
(Series 105190)

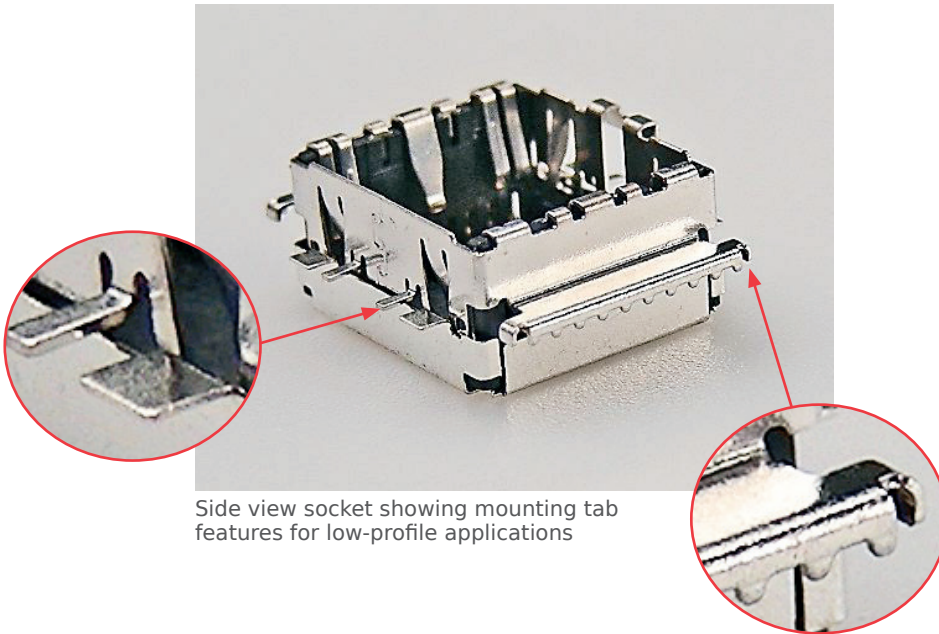


SMIA 55 (5.5 by 5.5mm, Mid-mount)  
(Series 105200)

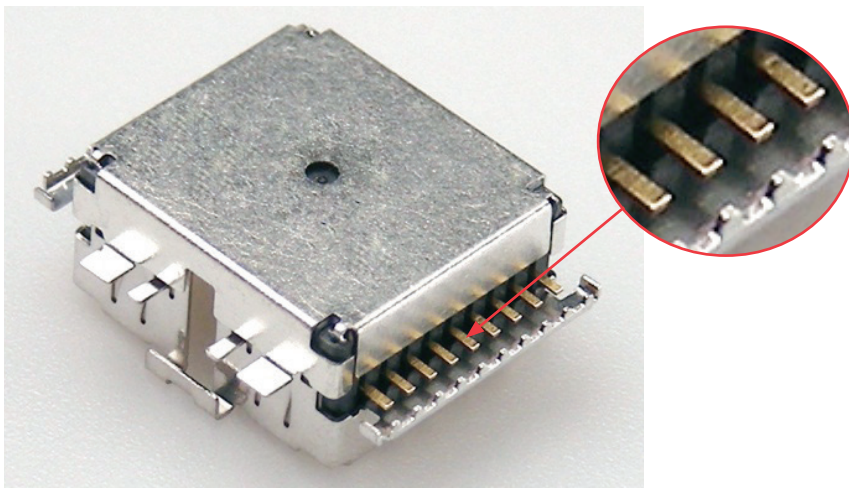


**Unique Product Features - SMIA85 Camera Socket (Example)**

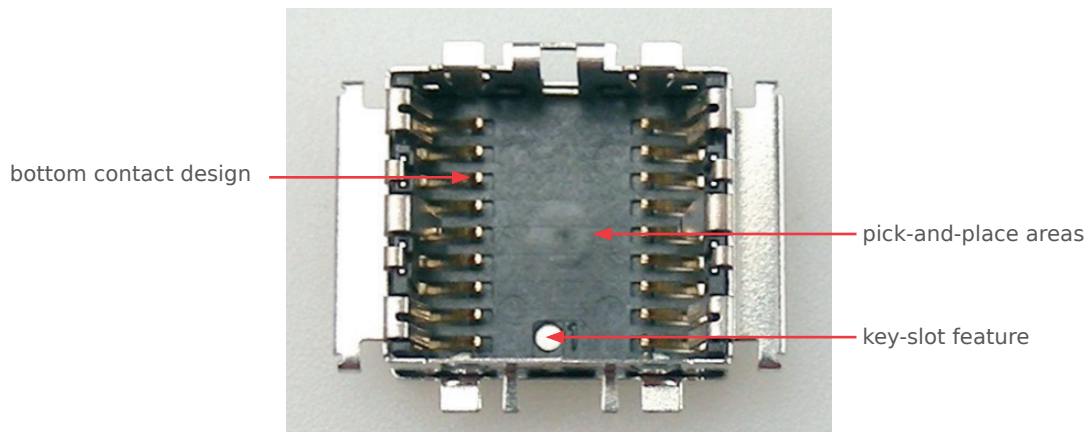
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Side view socket showing mounting tab features for low-profile applications



Bottom view of socket showing contacts hidden beneath protective shell extension for excellent EMI shielding



Top view of socket showing key-slot feature and pick-and-place zone

**Unique mounting and low-profile features of the mid-mount (series 78725) SMIA85 camera socket**



## Applications

### Consumer

- Camera phones
- Tablet PCs
- Phablets (a larger category of smart phones that combines the functionality of smart phones with those of tablets)
- Game cameras
- Pinhole cameras
- Webcams (notebook and PC monitors)

### Industrial

- Surveillance (Internet protocol) and security cameras
- Traffic cameras
- Industrial cameras
- Remote or trail cameras

### Automotive

- GPS navigator with digital camera



Webcam on notebook



GPS navigator with digital camera



Surveillance camera



Smartphone and tablet PC devices

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## Ordering Information

Order No.	SMIA classification	X-Y Dimensions	Mounting Style
78725-1002	SMIA85	8.50 by 8.50mm	Mid-mount
105190-0001	SMIA75	7.50 by 7.50mm	Top-mount
105167-0001	SMIA65	6.50mm by 6.50mm	
105163-1001			
105200-0008	SMIA55	5.50 by 5.50mm	Mid-mount

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