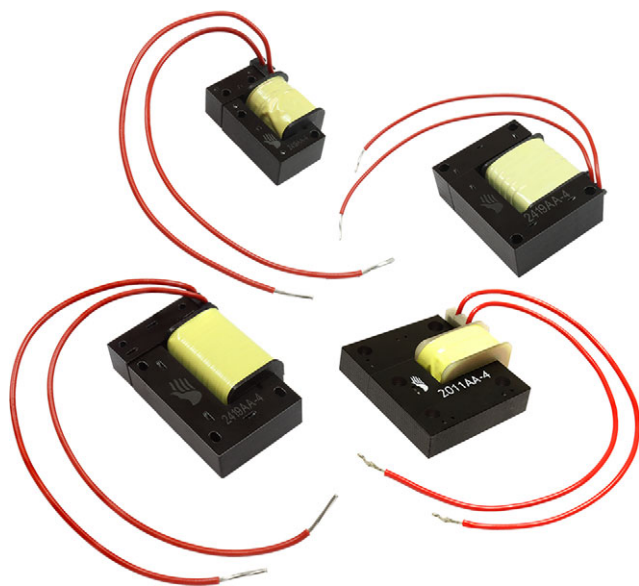


## Automotive IHPT™ Haptic Feedback Actuator With Immersion License



### FEATURES

- High impulse vibrations for clear tactile feedback in noisy environments
- Drives 0.5 kg load to 6 g's of acceleration with 12 V, 5 ms pulse (tested with Vishay's custom spring return fixture)
- Standard lead termination is dipped 100 % tin solder; customer specific connectors available upon request
- Two-piece magnetic solenoid construction with mounting holes; comprised of stationary "U" core and moving "I-bar"
- AEC-Q200 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

### APPLICATIONS

- Automotive dashboards, touch screens, and center consoles
- Physical feedback for electronic shift transmissions, steering wheels, seats, control panels
- Touch screens for human-machine interfaces

### LINKS TO ADDITIONAL RESOURCES



STANDARD ELECTRICAL SPECIFICATIONS						
PART NUMBER	FORCE OUTPUT (N)	FORCE COEFFICIENT <sup>(1)</sup>	RESPONSE TIME TYP. (ms)	L <sub>0</sub> INDUCTANCE ± 20 % AT 1 kHz, 0.25 V, 0 A (mH)	DCR TYP. (Ω)	DCR MAX. (Ω)
IHPT1207AGELR39ABA	25	0.39	5	1.35	0.95	1.04
IHPT1710ACEL1R2ABA	45	1.2	5	4.04	2.0	2.2
IHPT1411AFELR73ABA	80	0.73	5	1.8	0.95	1.09
IHPT1614ACEL2R7BBA	120	2.7	5	3.5	1.2	1.32

#### Notes

- All specifications are referenced to 25 °C ambient, and assume a 0.75 mm (0.030") gap
  - Operating temperature range -40 °C to +105 °C
  - The part temperature (ambient + temperature rise) should not exceed 105 °C under worst case operating conditions. Circuit design, component placement, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application
  - Rated voltage: 16 V maximum
  - Dielectric withstand voltage (coil to core) = 150 V<sub>DC</sub>
- <sup>(1)</sup> Applied force, in newtons, can be estimated by the following equation:  $F = \text{FORCE COEFFICIENT} \times I_{PK}^2$

This product is covered by a license from Immersion or its affiliates solely when incorporated into haptic products in an authorized field of use as set forth in more detail at the following link: [www.vishay.com/doc?34602](http://www.vishay.com/doc?34602). Protected under one or more of the U.S. Patents found at the following address [www.immersion.com/patent-marking.html](http://www.immersion.com/patent-marking.html) and other patents.



GLOBAL PART NUMBER

I H P T

PRODUCT FAMILY

1 4 1 1 A F

SIZE

E L

PACKAGE CODE

EL = includes  
Immersion license

R 7 3

FORCE COEFFICIENT

R73 = 0.73

A B A

SERIES

DESCRIPTION

IHPT1411AF-A

MODEL

R73

FORCE COEFFICIENT

TRAY

PACKAGE CODE

e3

JEDEC® LEAD (Pb)-FREE STANDARD

MATERIAL

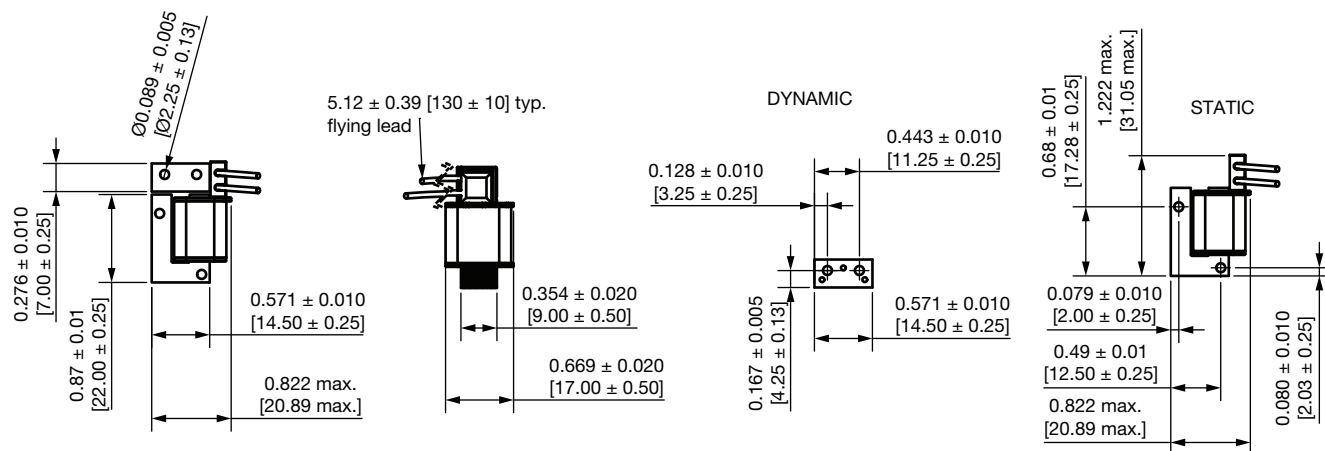
Core	Laminated steel
Wire	Copper, PU/PA insulated
Solder	Hot dip tin

SOLDER COMPOSITION

Sn	99.3 %
Cu	0.7 %

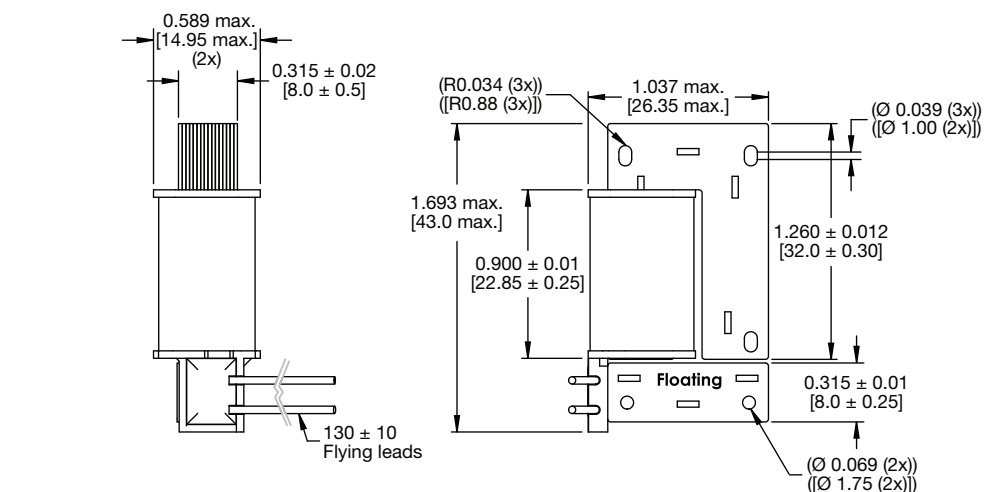
DIMENSIONS in inches [millimeters]

IHPT1207AGELR39ABA (25N)

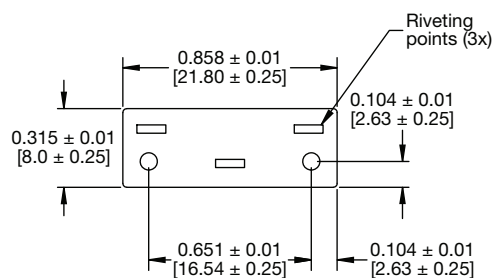


**DIMENSIONS** in inches [millimeters]

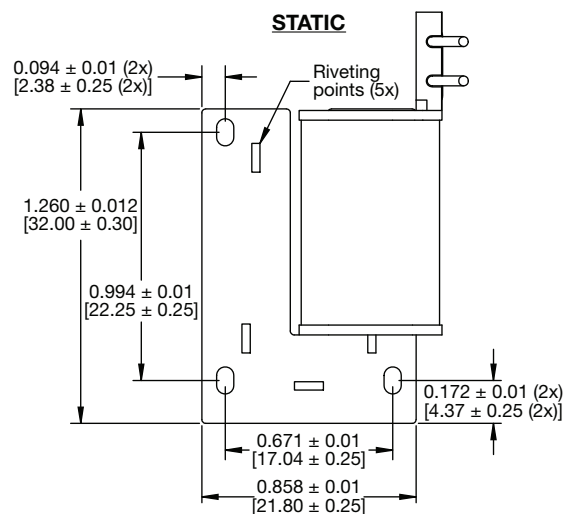
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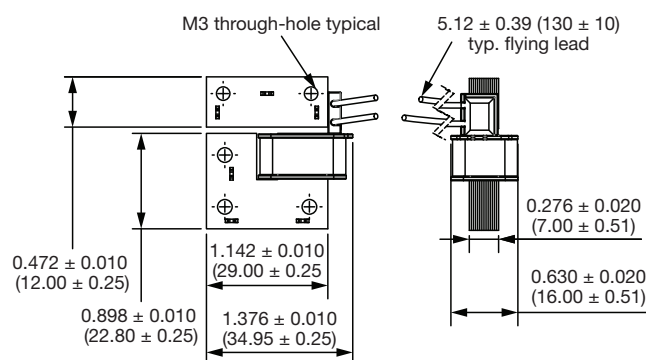
## DYNAMIC



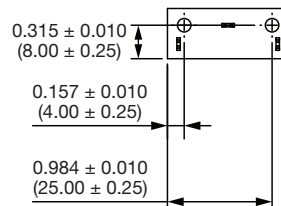
## STATIC



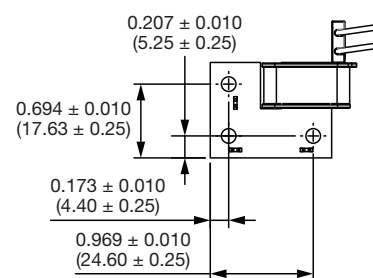
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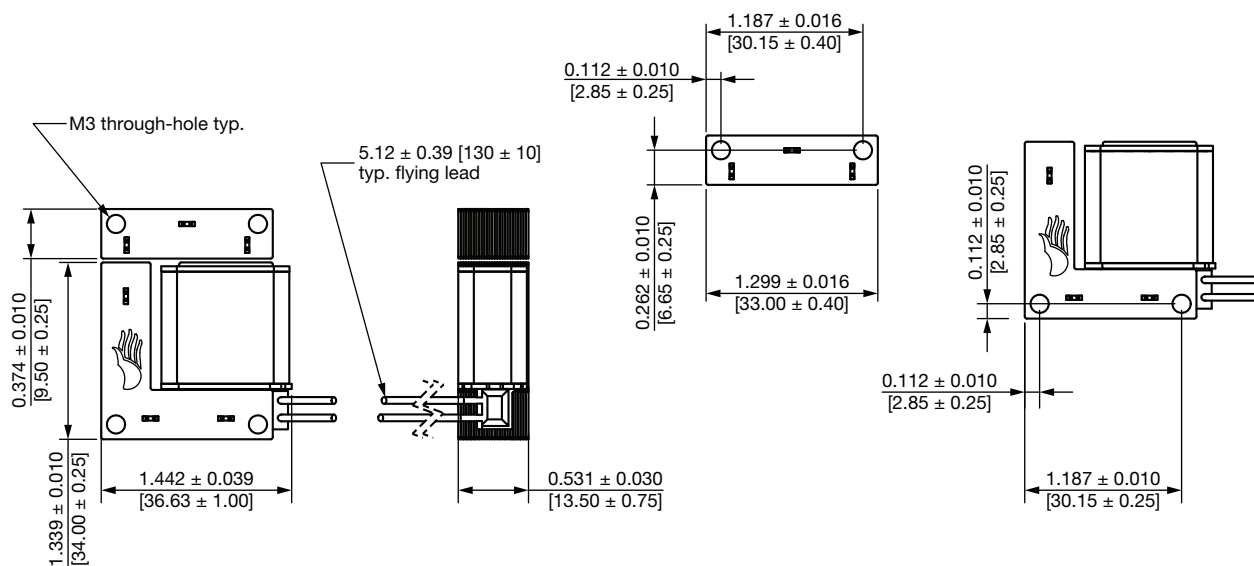
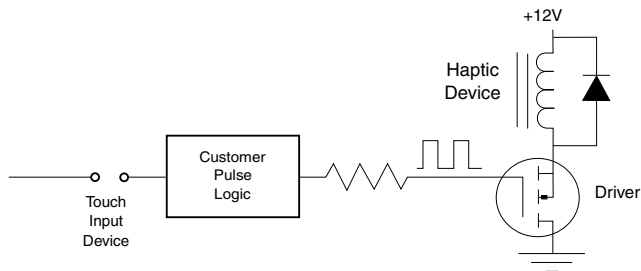
## DYNAMIC



## STATIC



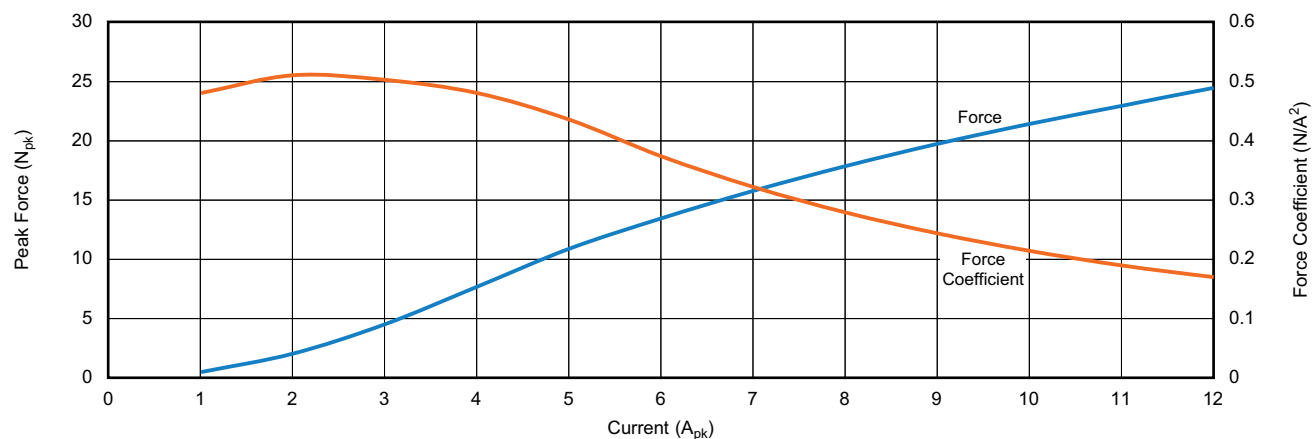
**DIMENSIONS** in inches [millimeters]

**IHPT1614ACEL2R7BBA (120N)**

**TYPICAL APPLICATION**


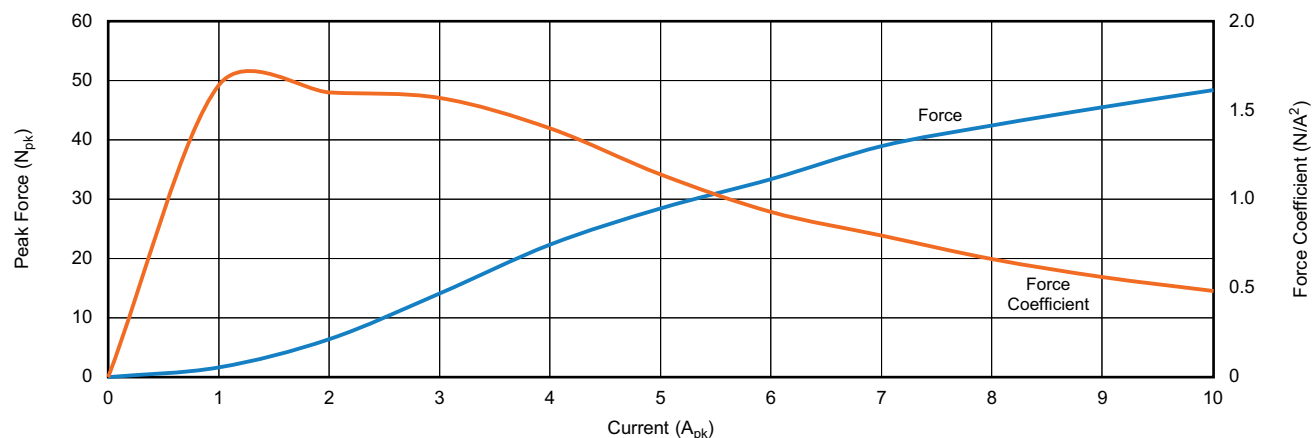


**PEAK FORCE RESPONSE (Typical)**

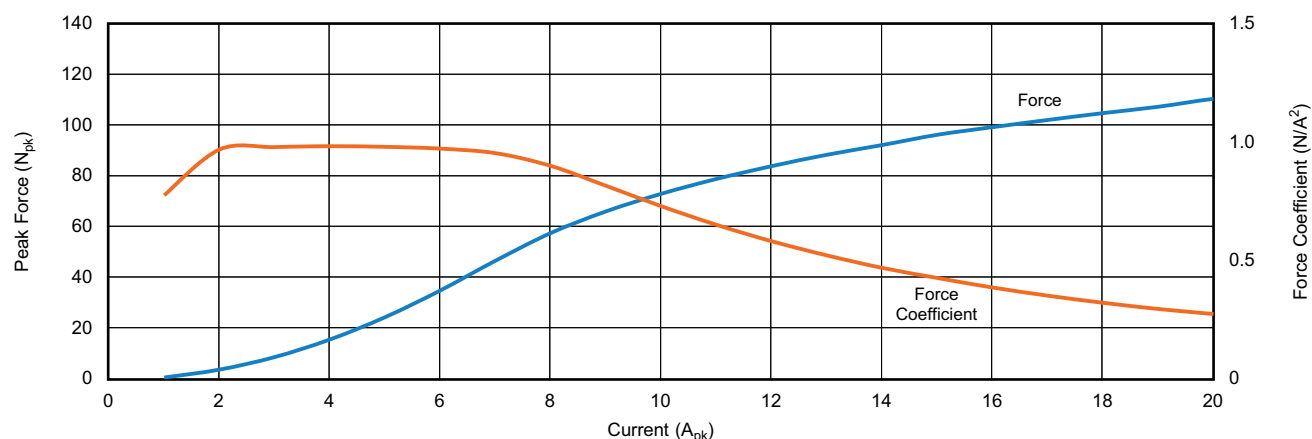
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**IHPT1710ACEL1R2ABA (45N)**



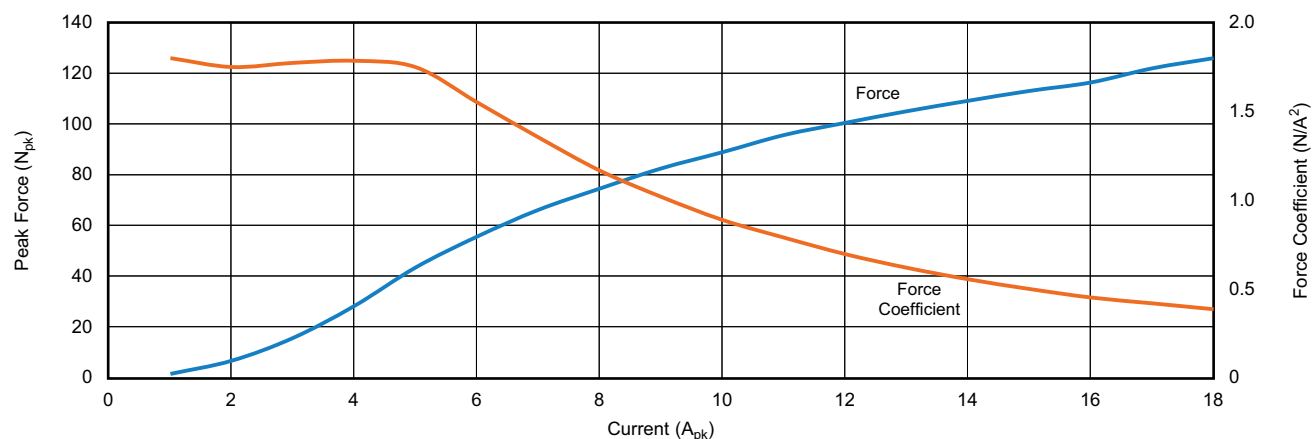
**IHPT1411AFELR73ABA (80N)**



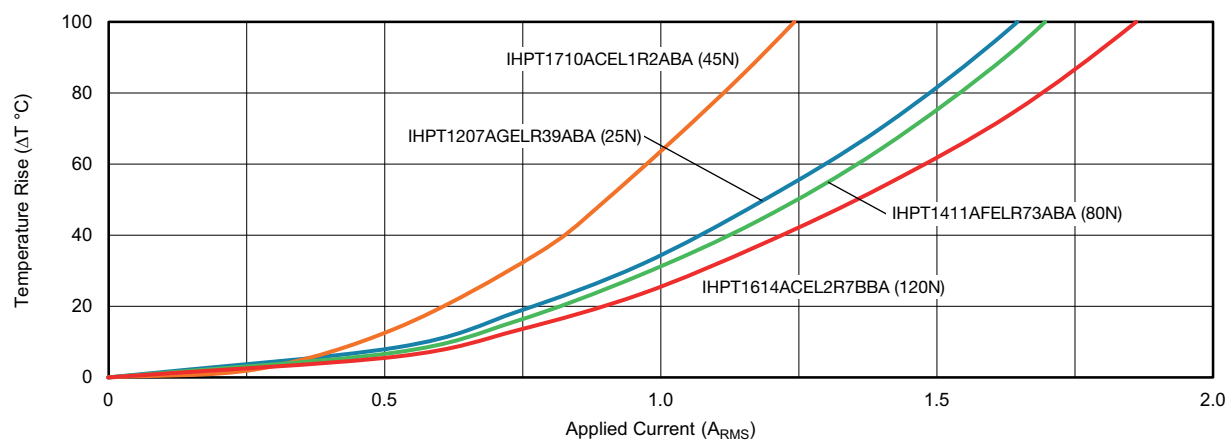


### PEAK FORCE RESPONSE (Typical)

IHPT1614ACEL2R7BBA (120N)



### TEMPERATURE RISE





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