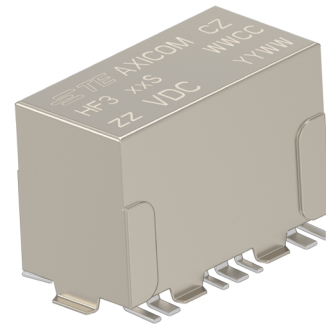


AXICOM HF3 S RELAY

RF SIGNAL RELAYS

INTRODUCTION

TE Connectivity's (TE) Axicom HF signal relays, small size electromechanical relays designed for high frequency signal transmission applications, are manufactured in a wide range of variants. The HF relays are designed as 1 changeover contact, giving them an operating signal range up to 3 GHz with excellent high frequency characteristics.



FEATURES

- Y-Design
- Frequency range DC to 3GHz
- Impedance 50Ω / 75Ω
- Small dimensions (15x7.6x10.6mm)
- 1 form C contact (1 changeover contact)
- Immersion cleanable
- Low power consumption ($\leq 140\text{mW}$)

APPLICATIONS

- Cable modems and linecards/ CATV
- Tabs
- Measurement and test equipment ATE
- Satellite / audio / video tuners
- Wireless base stations and antennas
- Power stages

HF3 S RELAY

RF SIGNAL RELAYS

CONTACT DATA

Contact arrangement	1 form C, 1 CO
Max. switching voltage	220 VDC, 250 VAC
Rated current	2 A
Limiting continuous current, 23°C	2 A
Switching power	60 W, 62.5 VA,
	50 W (2.5 GHz)
Max. continuous RF-power, @ 20°C., VSWR <1.2	100W @ 3GHz ¹⁾
	150W @ 2GHz ¹⁾
Breaking capacity max.	300W ¹⁾
Contact material	Ag, Au covered
Minimum switching voltage	100 µV
Initial contact resistance	<100 mΩ at 10 mA/30 mV
Operate time	typ. 3 ms, max. 5 ms
Release time	
without diode in parallel	typ. 2 ms, max. 5 ms
with diode in parallel	typ. 4 ms, max. 6 ms
Bounce time	typ. 1 ms, max. 3 ms
Duration of set/reset pulse min.	20 ms
Mechanical endurance	10 ⁷ operations

1) with appropriate cooling only.

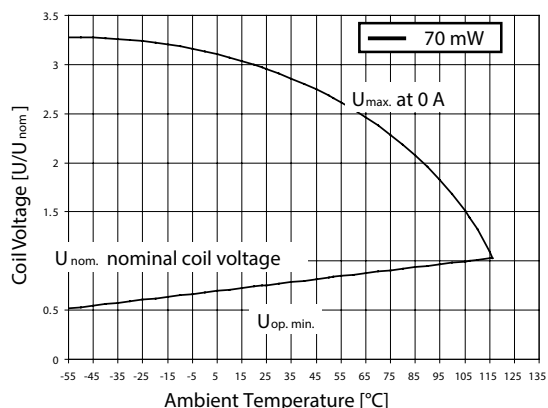
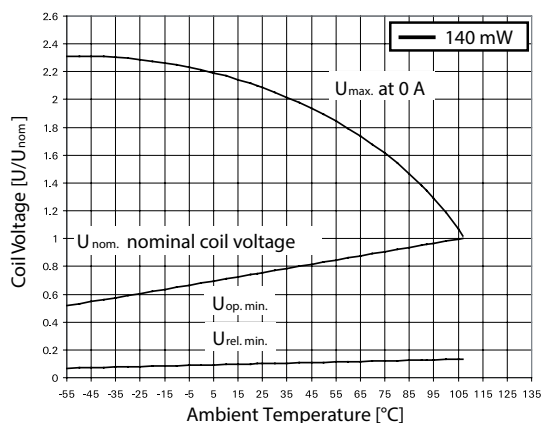
COIL DATA

Coil voltage	3 to 24 VDC
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Coil code	Rated voltage VDC	Operate voltage VDC	Limiting voltage VDC	Release voltage VDC	Coil resistance Ω±10%	Rated coil power mW
50 Ω version, monostable, 1 coil						
51S	3	2.25	6.50	0.30	64	140
52S	4.5	3.38	9.80	0.45	145	140
53S	5	3.75	10.90	0.50	178	140
55S	9	6.75	19.60	0.90	574	140
56S	12	9.00	26.10	1.20	1028	140
57S	24	18.00	52.30	2.40	4114	140
75 Ω version, monostable, 1 coil						
01S	3	2.25	6.5	0.30	64	140
02S	4.5	3.38	9.80	0.45	145	140
03S	5	3.75	10.90	0.50	178	140
05S	9	6.75	19.60	0.90	574	140
06S	12	9.00	26.10	1.20	1028	140
Coil code	Rated voltage VDC	Operate voltage VDC	Limiting voltage VDC	Release voltage VDC	Coil resistance Ω±10%	Rated coil power mW
50 Ω version, bistable, 1 coil						
73S	5	3.75	15.30	-3.75	357	70
50Ω version, bistable, 2 coils						
91S	3	2.25	6.50	2.25	64	140
92S	4.5	3.38	9.80	3.38	145	140
93S	5	3.75	10.90	3.75	178	140
95S	9	6.75	19.60	6.75	574	140
96S	12	9.00	26.10	9.00	1028	140
75Ω version, bistable, 2 coils						
41S	3	2.25	6.5	2.25	64	140
42S	4.5	3.38	9.80	3.38	145	140
43S	5	3.75	10.90	3.75	178	140
46S	12	9.00	26.10	9.00	1028	140

All figures are given for coil without pre-energization, at ambient temperature +23°C.

COIL OPERATING RANGE



INSULATION DATA

	50 Ω version	75 Ω version
Initial dielectric strength		
Between open contacts	600 V _{rms}	
Between contact and coil	1000 V _{rms}	
Initial surge withstand voltage		
Between open contacts	1000 V	
Between contact and coil	1500 V	

RF DATA

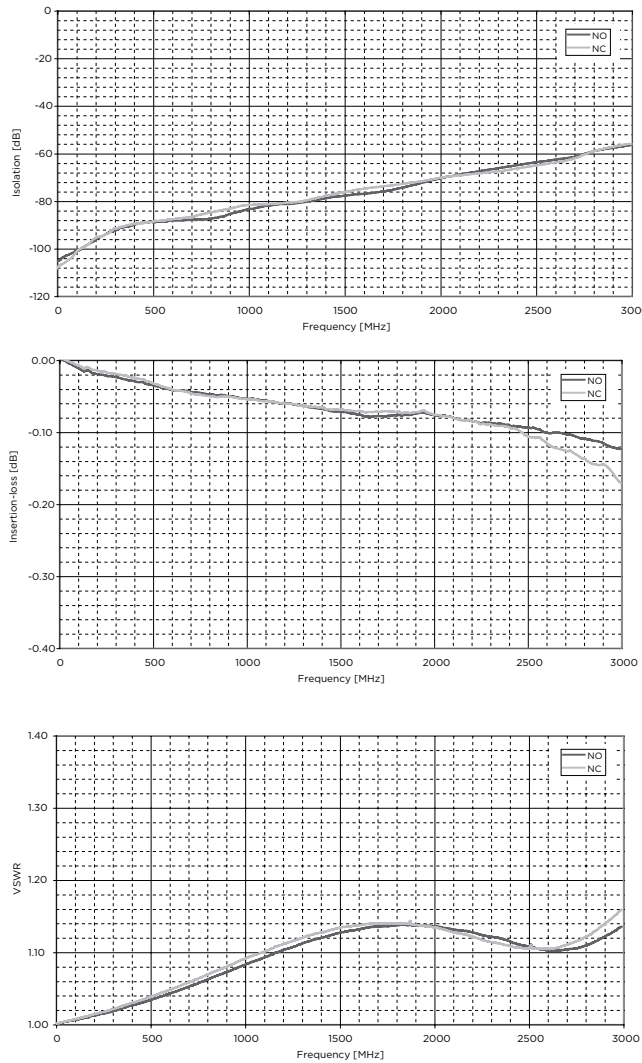
	50 Ω version	75 Ω version
Isolation		
@ 100 MHz / 900 MHz	95 dB/80 dB	96 dB/80 dB
@ 3 GHz	55 dB	50 dB
Insertion loss		
@ 100 MHz / 900 MHz	0.03 dB / 0.12 dB	0.03 dB / 0.12 dB
@ 3 GHz	0.30 dB	0.30 dB
Voltage standing wave ratio (VSWR)		
@ 100 MHz / 900 MHz	1.05 / 1.10	1.05 / 1.20
@ 3 GHz	1.25	1.30

OTHER DATA

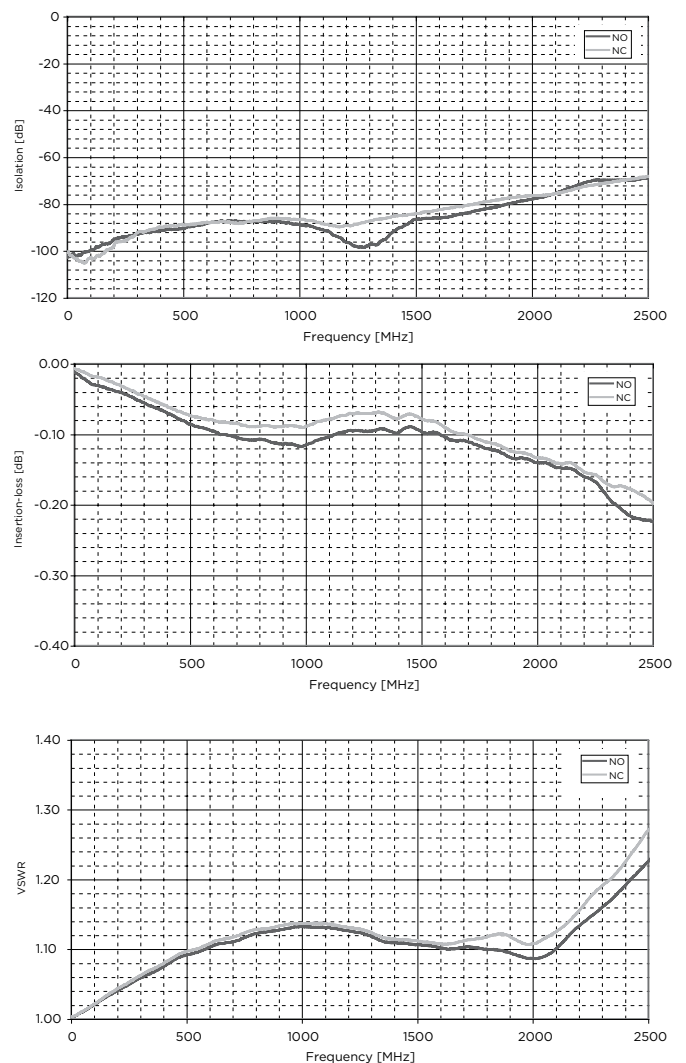
Material compliance	EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at www.te.com/customer-support/rohssupportcenter
Ambient temperature	-55 °C to +85 °C
Thermal resistance	< 165 K/W
Category of environmental protection	
IEC 61810	RT III - wash tight
Vibration resistance (functional)	35 g, 10 Hz to 1000 Hz
Shock resistance (functional), half sinus 11ms	50 g
Shock resistance (destructive), half sinus 0.5ms	150 g
Terminal type	SMT
Weight	max. 3 g
Resistance to soldering heat SMT	Peak value
IEC 60068-2-58	250 °C/10 s
Moisture sensitive level, JEDEC J-Std-020D	MSL3
Ultrasonic cleaning	not recommended
Packaging/unit	reel/400 pcs., box/400 or 2000 pcs.

GRAPHS

RF performance, 50 Ω version



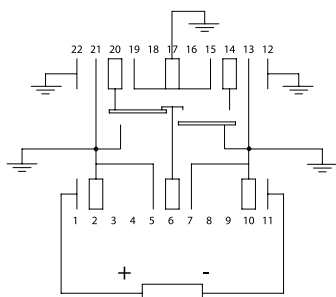
RF performance, 75 Ω version



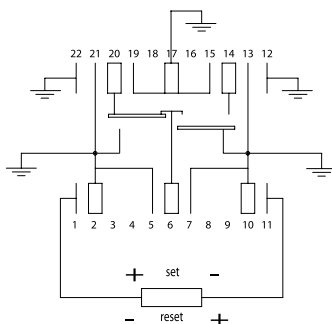
TERMINAL ASSIGNMENT

TOP view on component side of PCB

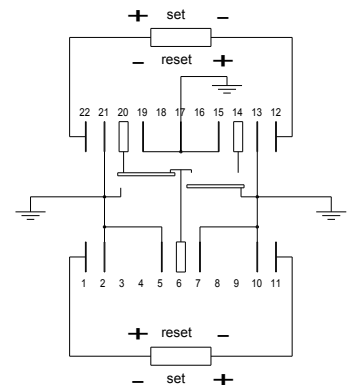
Monostable



Bistable, 1 coil



Bistable, 2 coils

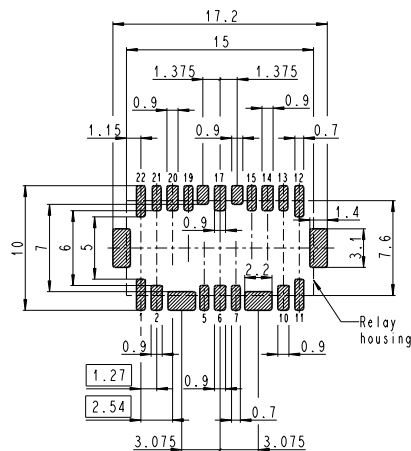


Note: Contacts are shown in reset condition. Contact position might change during transportation and must be reset before use.

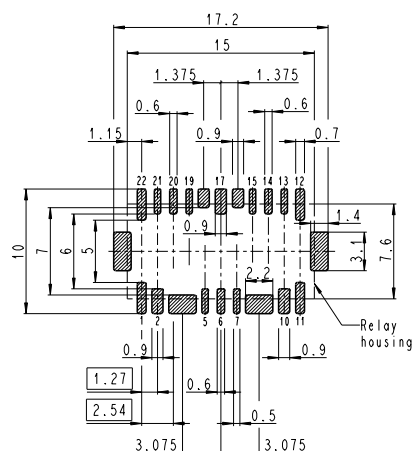
PCB LAYOUT

TOP view on component side of PCB

50 Ω version

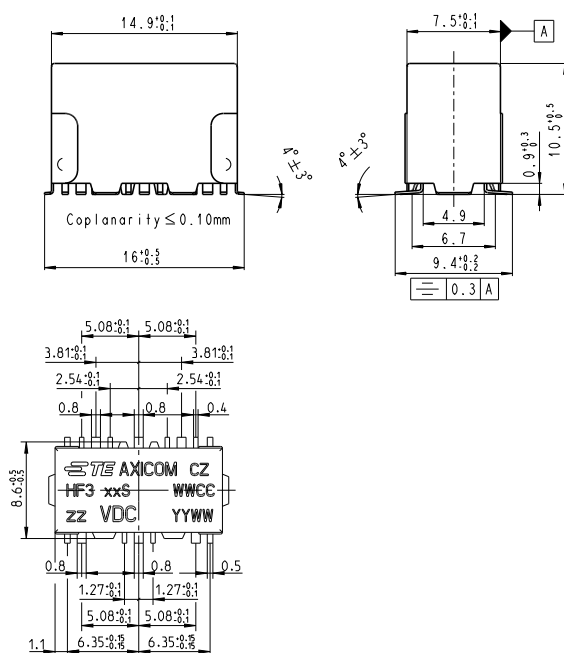


75 Ω version

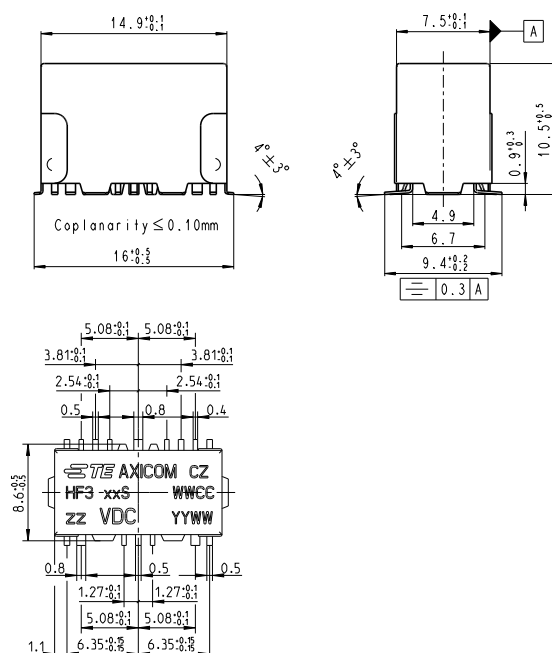


DIMENSIONS

50 Ω version

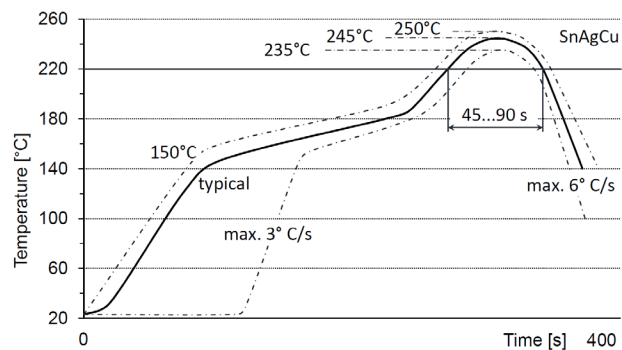


75 Ω version

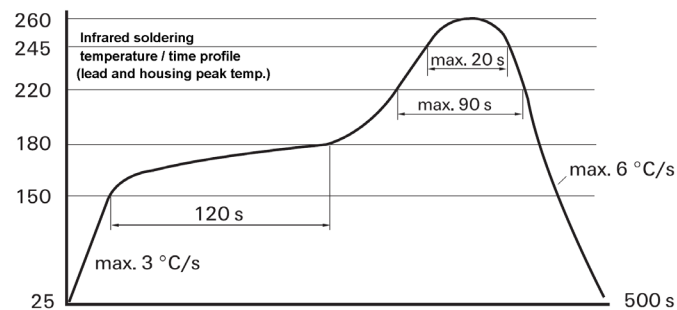


PROCESSING

Recommended reflow soldering profile IEC 61760-1

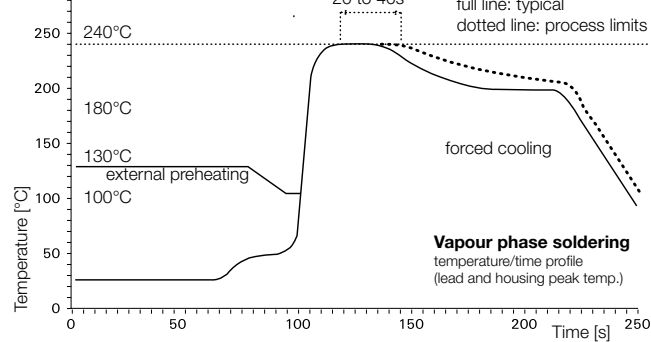


Resistance to soldering heat - Reflow profile IEC 60068-2-58

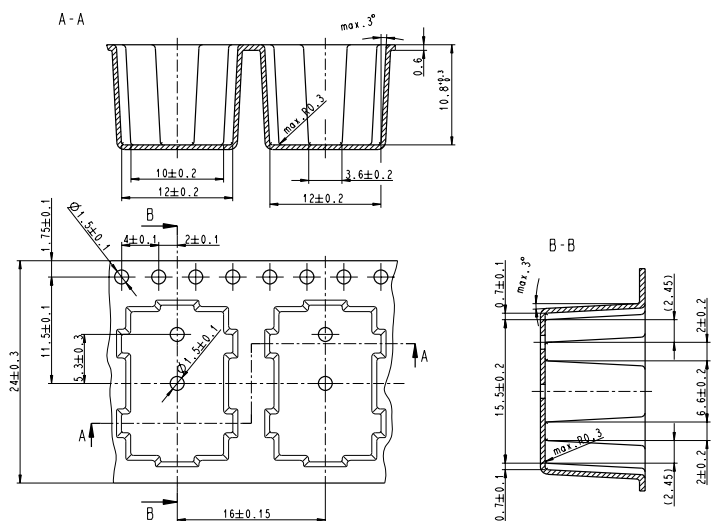


Recommended soldering conditions

Vapour phase soldering

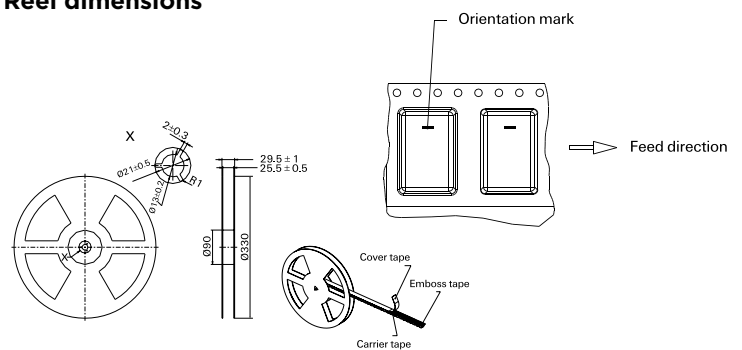


PACKING

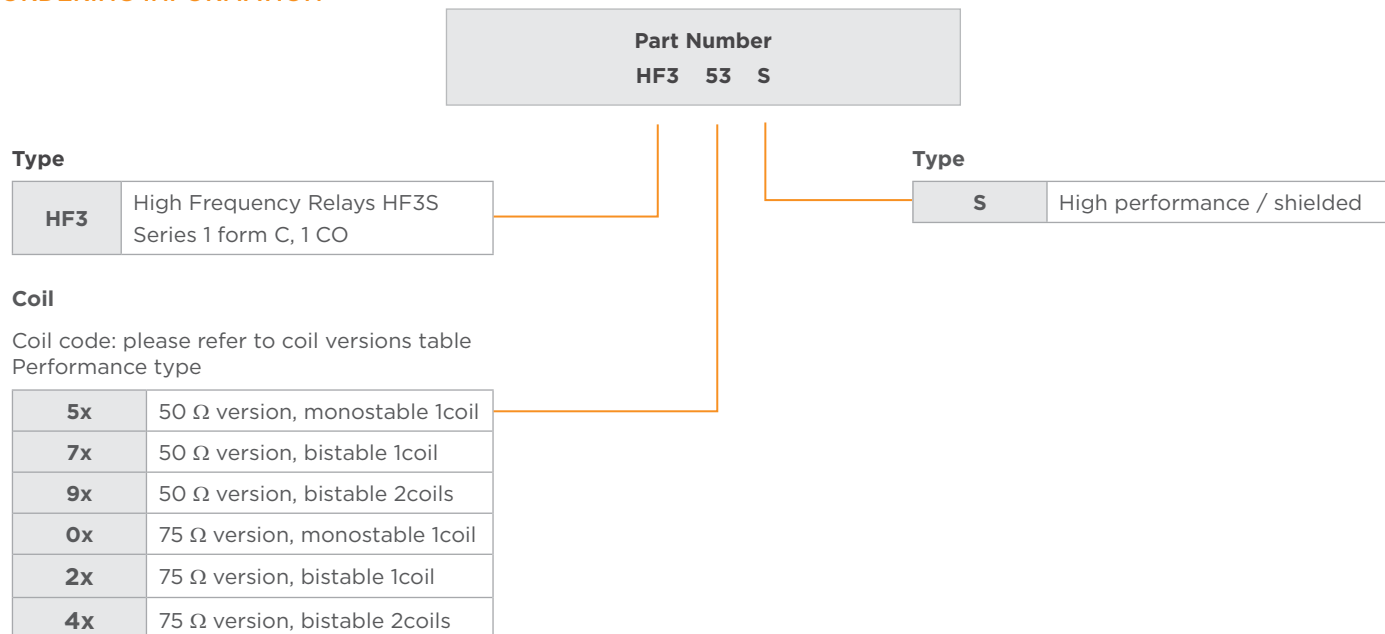


Tape and reel for SMT

Reel dimensions



ORDERING INFORMATION



PRODUCT INFORMATION

TE Part Number	Arrangement	Version	Coil	Coil type	Part Number
HF3 53S	1 form C (1 CO)	50 ohm	5VDC	Monostable	2-1462051-3
HF3 56S			12VDC		3-1462051-1
HF3 57S			24VDC	Bistable 2 coils	2-1462051-2
HF3 92S			4.5VDC		2-1462051-5
HF3 93S			5VDC		2-1462051-4
HF3 03S		75 ohm	5VDC	Bistable 1 coil	2-1462050-2
HF3 05S			9VDC		2-1462050-3
HF3 06S			12VDC		2-1462050-7

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