LOW OHM POWER RESISTORS

HBE

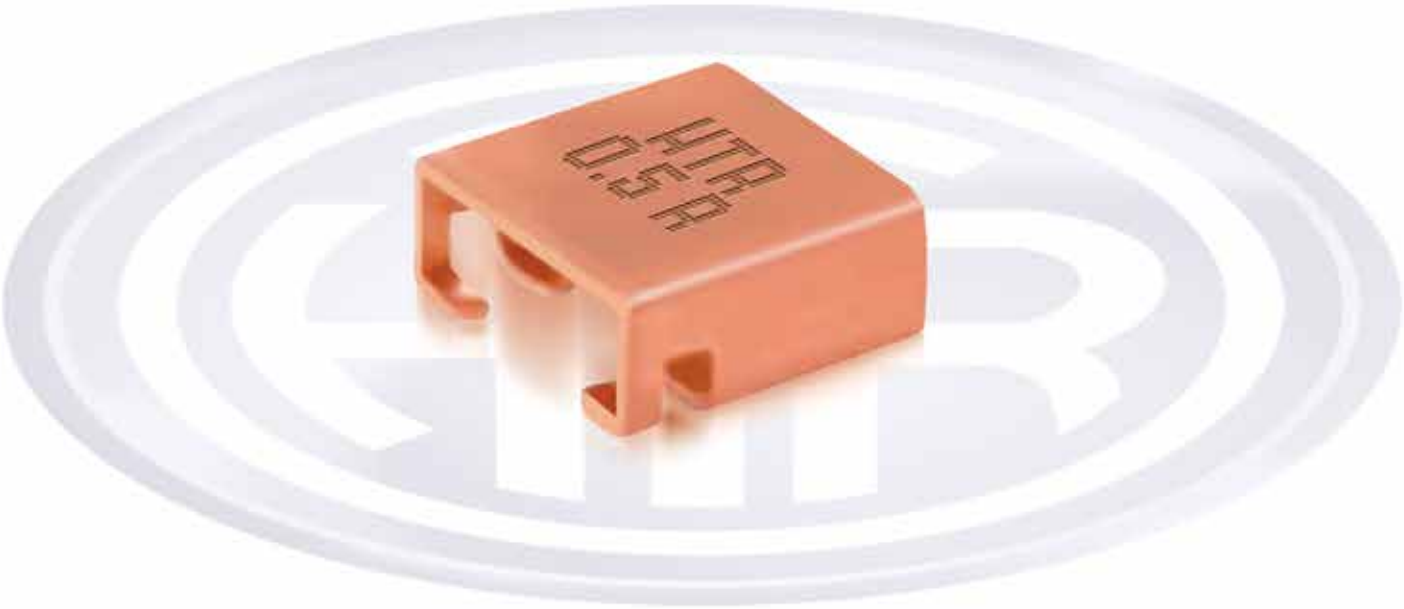
SERIES

Size 2726

• Open frame electron beam welded punched out type.
•Power Rating at 100°C - upto 7W
•Power Rating at 70°C - upto 12W
R0002 to R005

AEC-Q200 Qualified

Pb-free RoHS COMPLIANT



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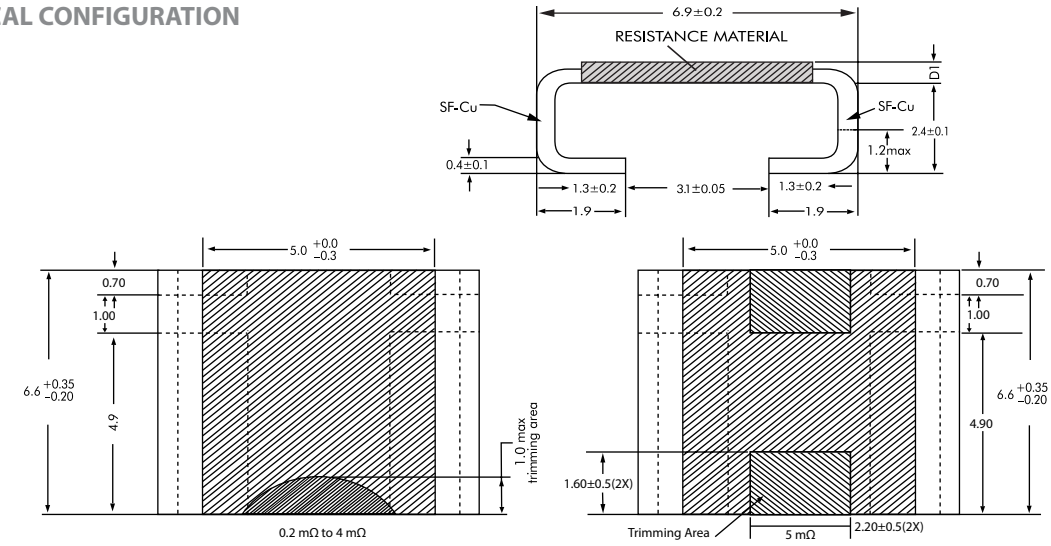
PHYSICAL CONFIGURATION



DIMENSIONAL TABLE

SR NO.	HI-TECH PART NAME	WATTAGE AT 100° C	WATTAGE AT 70° C	D1 (mm)	INTERNAL HEAT RESISTANCE (Rthi)	TCR (PPM)	TYPICAL WT. PER PC (Gms)
1	HBE7W R0007 F	7W	12W	0.47 ± 0.10	10° K/W	<50	0.47
2	HBE5W R0002 F	5W	12W	1.30 ± 0.10	4° K/W	< 20	0.73
3	HBE5W R0003 F	5W	12W	0.99 ± 0.10	5° K/W	< 50	0.65
4	HBE5W R0005 F	5W	9W	0.65 ± 0.10	8° K/W	< 20	0.45
5	HBE5W R001 F	5W	7W	0.35 ± 0.10	15° K/W	< 50	0.30
6	HBE4W R002 F	4W	7W	0.50 ± 0.10	14° K/W	< 50	0.50
7	HBE3W R003 F	3W	5W	0.34 ± 0.10	21° K/W	< 50	0.31
8	HBE2W R004 F	2W	4W	0.34 ± 0.10	28° K/W	<50	0.30
9	HBE2W R005 F	2W	3W	0.34 ± 0.10	33° K/W	< 50	0.28

APPLICATIONS

- Current sensor for power hybrid applications.
- Automotive applications that require high current capability.
- Frequency convertors.
- Power modules.

FEATURES

- 5W constant power possible in R0005.
- 4 terminal connections for exceptionally accurate measurement.
- Excellent long term stability due to nature of construction.

ELECTRICAL AND ENVIRONMENTAL CHARACTERISTICS

PARAMETER / PERFORMANCE TEST & TEST METHOD	PERFORMANCE REQUIREMENTS
Power Rating	For FeCrAl - Full power dissipation at 70° C and linearly derated to zero at +170° C. For Manganin (< 0.5% Improved Stability) - Full power dissipation at 100° C & linearly derated to zero at +140° C. For Manganin (< 1% Stability) - Full power dissipation at 130° C and linearly derated to zero at +170° C.
Inductance	< 3nH
Resistance Tolerance	± 1% (0.5% and other tolerance available on request)
Temperature Range	- 55° C to +170° C (Suitably derated as per derating curve provided)
Voltage Rating / Limiting / Max. Working Voltage (Subject to max. Terminal Temperature of 120° C)	$\sqrt{P \times R}$
Low Temperature Storage and Operation [-65° C for 24 h**]**	ΔR ± 0.1% - Average
Temperature Coefficient of Resistance (Ambient Temperature Range 20° C - 60° C)	From 20 ppm / K (Depending on Resistance Value)
Temperature Cycling -2000 cycles (-55° C to 150° C)	ΔR ± 0.5% - Average
Life Test / Operational Life - 2000 h rated power with Temperature limitation on Terminal kept at 120° C	ΔR ± 1% - Average (In covered condition)
Moisture Resistance [MIL-STD-202 method108]	ΔR ± 0.1% - Average
Mechanical Shock [100 g. 6 ms half sine]	ΔR ± 0.2% - Typical
Vibration, High Frequency [20 g. 10-2000 Hz]	ΔR ± 0.2% - Typical
Bias Humidity [+85° C, 85% RH, 1000h]	ΔR ± 0.5% - Typical

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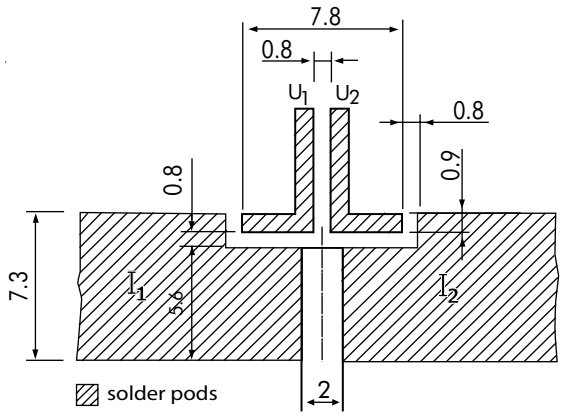
RECOMMENDED PCB - LAYOUT



RECOMMENDED SOLDER PROFILE

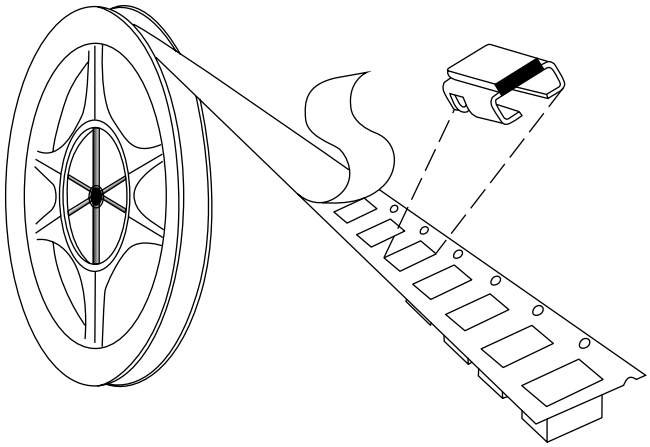
Reflow, IR soldering			
Temperature (°C)	260	255	217
Time (Sec)	Peak	40	90

PACKING

A. BULK

Resistors shall be packed in plastic Box-K44 of approximate size 162X104X37mm- 1500pcs/box & this box will be vacuum sealed with polythene of 100 micron. With enclose silica gel.

B. TAPE & REEL PACKING



SPECIFICATION	TAPEWIDTH	PARTS PER REEL
EIA-481-D	16mm	1500 pcs

Storage Condition (Packed) : Temp 25°C to 35°C, Humidity 30 to 80% RH, Shelf life-12 months.

Floor Life (Unpacked) : Temp 25°C to 35°C, Humidity 30 to 80% RH, Floor life-15 days.

MARKING

HTR PART NO	PRINTING
HBE7W ROOO7 F	HTR ROOO7 1% DATECODE

ORDERING INFORMATION

SERIES	TYPE	PACKING	RESISTANCE VALUE	TOLERANCE
HBE	HBE5W	Bulk - HBE5W Tape & Reel - HBE5WTR	R001	1%

Part no of HBE5W, Tape and reel with resistance value R001 and 1% tolerance, HTR part no. will be HBE5WTR R001 ±1%

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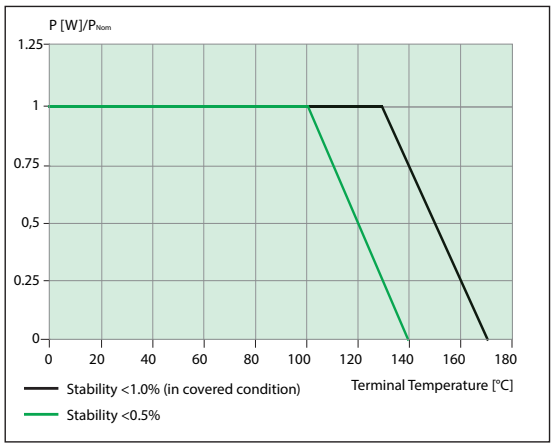
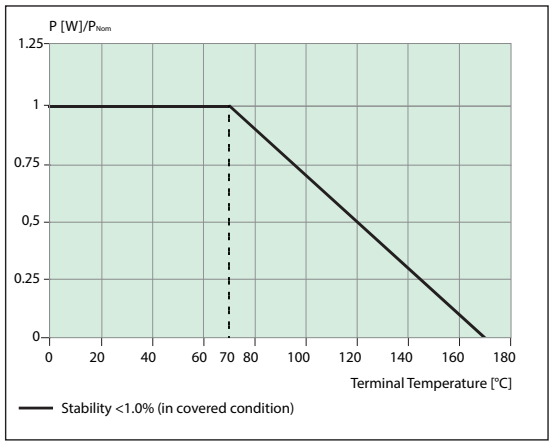
TYPICAL POWER DERATING CURVE FOR RESISTOR WHEN FULL POWER IS AT 100°C & 130°C

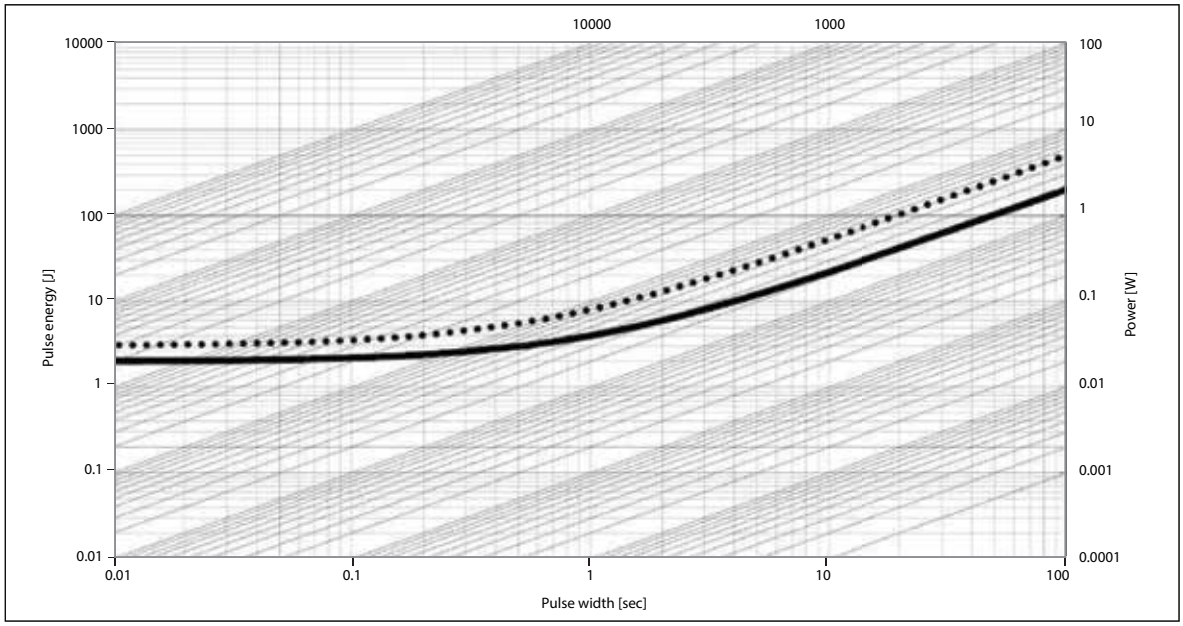


TYPICAL POWER DERATING CURVE FOR RESISTOR WHEN FULL POWER IS AT 70°C



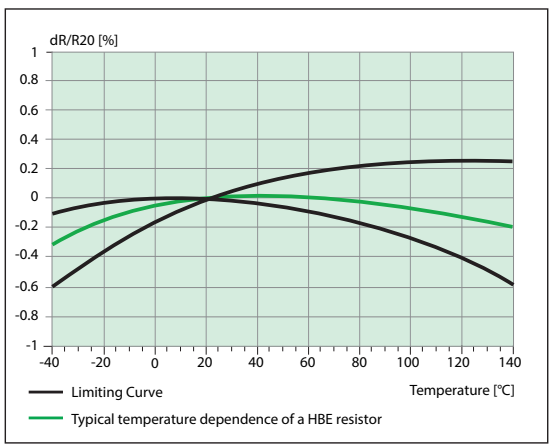
In case the Design Engineer requires a specific graph of a particular component it can be supplied on request.

MAXIMUM PULSE ENERGY WITH RESPECT TO PULSE POWER FOR PERMANANT OPERATION



In this graph the max. & min. curve are shown as ••• and ▬ for all resistance values, the area between the max. & min. curve is applicable.
In case the Design Engineer requires a specific graph of a particular component it can be supplied on request.

TYPICAL TEMPERATURE DEPENDANCE OF THE ELECTRICAL RESISTANCE



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