



ސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން

މަސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން، ސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން  
ސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން

މަސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން: 3 ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން 2023  
MNU-CA-PAMD/2023/111

މަސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން: 30 ދުވަހުގެ (ހިދުމަތް ދެއްވުމުގެ ދުވަހުގެ ތެރޭގައި ހިދުމަތް ދެއްވުން)

މަސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން: 30 ދުވަހުގެ (ހިދުމަތް ދެއްވުމުގެ ދުވަހުގެ ތެރޭގައި ހިދުމަތް ދެއްވުން)

މަސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން:  ފަސަޅުކޮށް ދެއްވުން، ފަސަޅުކޮށް ދެއްވުން، ފަސަޅުކޮށް ދެއްވުން، ފަސަޅުކޮށް ދެއްވުން  
މަސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން:  ހިދުމަތް ދެއްވުން، ހިދުމަތް ދެއްވުން، ހިދުމަތް ދެއްވުން، ހިދުމަތް ދެއްވުން

މަސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން / ފަސަޅުކޮށް ދެއްވުން  
މަސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން

މަސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން: 12 ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން 2023  
މަސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން

މަސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން: 12 ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން 2023  
މަސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން: 10:00

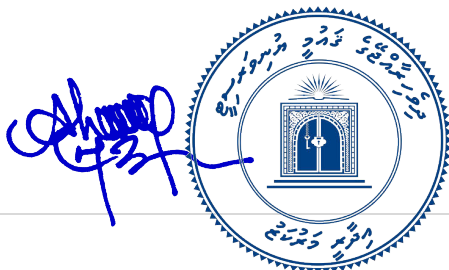
މަސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން: 10:00

މަސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން: 3345444  
މަސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން

fest@mnu.edu.mv

މަސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން: 3345111, 3345110, 3345109  
މަސަލާމަތުގެ ސަފުހާއެއްގައި ހިދުމަތް ދެއްވުން

procurement@mnu.edu.mv



















بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ وَبِالْحَمْدِ لِلَّهِ نَحْنُ عَابِدُونَ

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ وَبِالْحَمْدِ لِلَّهِ نَحْنُ عَابِدُونَ

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ وَبِالْحَمْدِ لِلَّهِ نَحْنُ عَابِدُونَ

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ وَبِالْحَمْدِ لِلَّهِ نَحْنُ عَابِدُونَ

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ وَبِالْحَمْدِ لِلَّهِ نَحْنُ عَابِدُونَ

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ وَبِالْحَمْدِ لِلَّهِ نَحْنُ عَابِدُونَ

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ وَبِالْحَمْدِ لِلَّهِ نَحْنُ عَابِدُونَ

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ وَبِالْحَمْدِ لِلَّهِ نَحْنُ عَابِدُونَ

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ وَبِالْحَمْدِ لِلَّهِ نَحْنُ عَابِدُونَ



تجزیاتی پیمانہ کی تفصیل:			
تجزیاتی پیمانہ کی تفصیل	تجزیاتی پیمانہ کی تفصیل	تجزیاتی پیمانہ کی تفصیل	تجزیاتی پیمانہ کی تفصیل
			تجزیاتی پیمانہ کی تفصیل
			تجزیاتی پیمانہ کی تفصیل (تجزیاتی)
			تجزیاتی پیمانہ کی تفصیل (تجزیاتی)
			تجزیاتی پیمانہ کی تفصیل

تجزیاتی پیمانہ کی تفصیل (تجزیاتی)	تجزیاتی پیمانہ کی تفصیل:
تجزیاتی پیمانہ کی تفصیل:	تجزیاتی پیمانہ کی تفصیل:
تجزیاتی پیمانہ کی تفصیل:	تجزیاتی پیمانہ کی تفصیل:
تجزیاتی پیمانہ کی تفصیل:	تجزیاتی پیمانہ کی تفصیل:

### تجزیاتی پیمانہ کی تفصیل

تجزیاتی پیمانہ کی تفصیل 3 اجزاء میں (تجزیاتی پیمانہ کی تفصیل) : (05 تجزیاتی)

20	20	20	تجزیاتی پیمانہ کی تفصیل
			تجزیاتی پیمانہ کی تفصیل
تجزیاتی پیمانہ کی تفصیل 3 اجزاء میں (تجزیاتی پیمانہ کی تفصیل):			

تجزیاتی پیمانہ کی تفصیل (15 تجزیاتی)

تجزیاتی پیمانہ کی تفصیل 50% تک

تجزیاتی پیمانہ کی تفصیل			
#	تجزیاتی پیمانہ کی تفصیل	تجزیاتی پیمانہ کی تفصیل	تجزیاتی پیمانہ کی تفصیل

تاریخ	تعداد	تعداد	تعداد
تعداد	تعداد	تعداد	تعداد
1			
2			
3			
4			
5			
6			
			تعداد

تعداد	تعداد
تعداد	تعداد
تعداد	تعداد
تعداد	تعداد

دستورالعمل برگزاری مسابقات علمی و فرهنگی دانش آموزان و دبیران مدارس متوسطه

ردیف (شماره)	عنوان	موضوع (موضوع)	مسابقات علمی و فرهنگی	شماره
				1
				2
				3
				4
				5
				6
				7
				8
				9
				10

توضیح: در صورتیکه در مسابقات علمی و فرهنگی 10 نفر از دبیران و 10 نفر از دانش آموزان در هر مدرسه شرکت کنند و در صورتیکه در مسابقات فرهنگی و هنری 5 نفر از دبیران و 5 نفر از دانش آموزان در هر مدرسه شرکت کنند. در صورتیکه در مسابقات علمی و فرهنگی 10 نفر از دبیران و 10 نفر از دانش آموزان در هر مدرسه شرکت کنند و در صورتیکه در مسابقات فرهنگی و هنری 5 نفر از دبیران و 5 نفر از دانش آموزان در هر مدرسه شرکت کنند.

		شماره:
		تاریخ:
موضوع:		ردیف مسابقات:
		نام دبیران و دانش آموزان

## BID SECURITY FORMAT

The Issuing Bank shall fill in this Bank Guarantee Form in accordance with the instructions indicated.

\_\_\_\_\_ [Bank's Name, and Address of Issuing Branch or Office]

**Beneficiary:** \_\_\_\_\_ [Name and Address of Procuring Entity]

**Date:** \_\_\_\_\_

**BID GUARANTEE No.:** \_\_\_\_\_

We have been informed that [name of the Bidder] (hereinafter called "the Bidder") has submitted to you its bid dated (hereinafter called "the Bid") for the execution of [name of contract] under Invitation for Bids No. [Procurement Reference number] ("the IFB").

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we [name of Bank] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of [amount in figures] ([amount in words]) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) has withdrawn its Bid during the period of bid validity specified by the Bidder in the Form of Bid; or
- (b) having been notified of the acceptance of its Bid by the Procuring Entity during the period of bid validity, (i) fails or refuses to execute the Contract Form; or (ii) fails or refuses to furnish the performance security, if required, in accordance with the Instructions to Bidders.

This guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the contract signed by the Bidder and the performance security issued to you upon the instruction of the Bidder; or (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of the Bidder's Bid.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

\_\_\_\_\_  
[signature(s)]

## PERFORMANCE GUARANTEE FORMAT

*[The issuing bank, as requested by the successful Bidder, shall fill in this form in accordance with the instructions indicated]*

Date: *[insert date (as day, month, and year)]*

Title of the procurement: *[Insert general title of the procurement]*

Procurement Reference No: *[insert reference]*

Bank's Branch or Office: *[insert complete name of Guarantor]*

**Beneficiary:** *[insert complete name of Procuring Entity]*

**PERFORMANCE GUARANTEE No.:** *[insert Performance Guarantee number]*

We have been informed that *[insert complete name of Supplier]* (hereinafter called "the Supplier") has entered into Contract No. *[insert number]* dated *[insert day and month]*, *[insert year]* with you, for the supply of *[description of Goods and related Services]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a Performance Guarantee is required.

At the request of the Supplier, we hereby irrevocably undertake to pay you any sum(s) not exceeding *[insert amount(s)<sup>1</sup> in figures and words]* upon receipt by us of your first demand in writing declaring the Supplier to be in default under the Contract, without cavil or argument, or your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This Guarantee shall expire no later than the *[insert number]* day of *[insert month]* *[insert year]*,<sup>2</sup> and any demand for payment under it must be received by us at this office on or before that date. We agree to a one-time extension of this Guarantee for a period not to exceed *[six months]* *[one year]*, in response to the Procuring Entity's written request for such extension, such request to be presented to us before the expiry of the Guarantee.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458, except that subparagraph (ii) of Sub-article 20(a) is hereby excluded.

.....

*[signatures of authorized representatives of the bank]*

<sup>1</sup> The Bank shall insert the amount(s) specified in the SCC and denominated, as specified in the SCC, either in the currency(ies) of the Contract or a freely convertible currency acceptable to the Procuring Entity.

<sup>2</sup> Dates established in accordance with Clause 18.4 of the General Conditions of Contract ("GCC"), taking into account any warranty obligations of the Supplier under Clause 16.2 of the GCC intended to be secured by a partial Performance Guarantee.



## BANK GUARANTEE FOR ADVANCE PAYMENT

*[The bank, as requested by the successful Bidder, shall fill in this form in accordance with the instructions indicated.]*

Date: *[insert date (as day, month, and year)]*

Title of the procurement: *[Insert general title of the procurement]*

Procurement Reference No: *[insert reference]*

*[Issuing bank's letterhead]*

**Beneficiary:** *[insert legal name and address of Procuring Entity]*

**ADVANCE PAYMENT GUARANTEE No.:** *[insert Advance Payment Guarantee no.]*

We, *[insert legal name and address of bank]*, have been informed that *[insert complete name and address of Supplier]* (hereinafter called "the Supplier") has entered into Contract No. *[insert number]* dated *[insert date of Agreement]* with you, for the supply of *[insert types of Goods to be delivered]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance is to be made against an advance payment guarantee.

At the request of the Supplier, we hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[insert amount(s)<sup>3</sup> in figures and words]* upon receipt by us of your first demand in writing declaring that the Supplier is in breach of its obligation under the Contract because the Supplier used the advance payment for purposes other than toward delivery of the Goods.

It is a condition for any claim and payment under this Guarantee to be made that the advance payment referred to above must have been received by the Supplier on its account *[insert number and domicile of the account]*

This Guarantee shall remain valid and in full effect from the date of the advance payment received by the Supplier under the Contract until *[insert date<sup>4</sup>]*. We agree to a one-time extension of this Guarantee for a period not to exceed *[six months][one year]*, in response to the Procuring Entity's written request for such extension, such request to be presented to us before the expiry of the Guarantee.

This Guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

\_\_\_\_\_  
*[signature(s) of authorized representative(s) of the bank]*


<sup>3</sup> The issuing bank shall insert the amount(s) specified in the SCC and denominated, as specified in the SCC, either in the currency(ies) of the Contract or a freely convertible currency acceptable to the Procuring Entity.

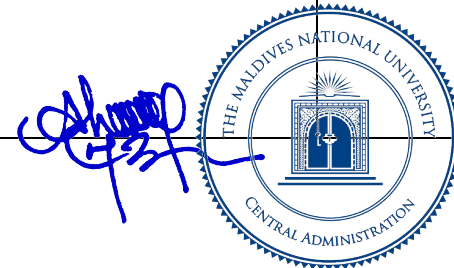
<sup>4</sup> Insert the Delivery date stipulated in the Contract Delivery Schedule.


ސަލާމް ސަލާމް - 3: ބަލަވާ ސަލާމް ސަލާމް / ސަލާމް ސަލާމް ސަލާމް  
ސަލާމް ސަލާމް ސަލާމް ސަލާމް ސަލާމް ސަލާމް ސަލާމް ސަލާމް

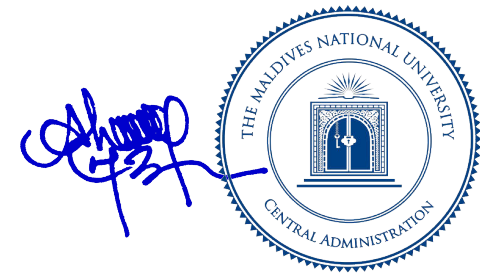



## EQUIPMENT REQUIRED FOR EMBEDDED SYSTEMS LAB

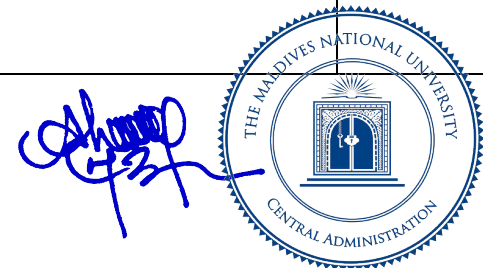
#	Item	Qty	Minimum requirement / specifications	Sample image	Other requirements
1	<p><b>Function generator</b></p> <p>Include:                      1 x Arbitrary Waveform - Function Generator                      1 x power cord                      1 x USB cable                      2 x BNC to BNC cable                      2 x BNC to clip cable                      1 x calibration certificate</p>	5	<p>Minimum frequency: 1 uHz                      Maximum frequency: 30 MHz                      No of channels: 2 channels                      Sampling rate: 200MSa/s                      Resolution: 1μHz                      Accuracy: ±1ppm of the settings, 18°C to 28°C                      Analog and digital modulation types: AM, DSB-AM, FM, PM, FSK, ASK, PSK and PWM Built-in Arbitrary Waveforms: 160 kinds, including Sinc, Exponential Rise, Exponential Fall, ECG, Gauss, HaverSine, Lorentz, Dual-Tone, etc.                      Built-in 8 orders harmonics generator                      Built-in 7 digits/s counter up to 200MHz                      Display: 3-inch TFT LCD, color screen                      Power Supply Voltage: 120V/220V Universal                      Max Amplitude Vpp @ 50 ohms:10 V                      Interfaces I/O: LAN / Ethernet, USB Host, USB                      Calibration Included: Factory Calibration</p>		






2	<p><b>Electrical and Electronic Trainer</b></p> <p>Include:  1 x Electrical and electronic trainer System (including all modules/hardware for the mentioned training)  1 x Full manual for all experiments</p>	10	<ul style="list-style-type: none"> <li>• Stand Alone modular Operation</li> <li>• Includes all the Basic Electrical fundamentals trainings</li> <li>• Input power: 220VAC 50Hz</li> <li>• Solderless connections</li> <li>• Complete set of coils and cores to understand the Basics of Electro magnetic induction and Transformer</li> <li>• Modular experimental panels should include:  Panels for basic electrical principles(series &amp; parallel circuits), basic experiments for electrician, sensors &amp; transducers, transistor experiments, digital logic gate experiments, flip-flops, op-amp, multiplexer, decoder &amp; encoder experiments, FM/AM radio kit, analog multiplexer/demultiplexer panel, voltage regulator experiment, oscillator &amp; multivibrator experiment, DC/AC bridge circuits, FM transmitter, memory experiments</li> </ul>		
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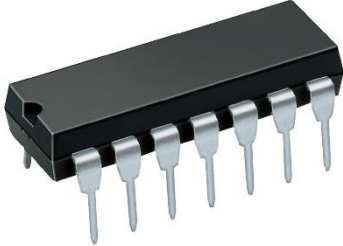


3	<p><b>Power Electronics Training system</b></p> <p>Include:  1 x Full Power Electronics Training System with tabletop workstation (including all modules/hardware for the mentioned training)  1 x software and Full manual for all experiments</p>	5	<ul style="list-style-type: none"> <li>• A modular design Power Electronics Training System with following modules:</li> <li>• Four-Quadrant Dynamometer</li> <li>• Data Acquisition and Control Interface</li> <li>• IGBT Chopper/Inverter</li> <li>• Power Thyristors</li> <li>• Rectifier and Filtering Capacitors</li> <li>• Input power: 220VAC 50Hz</li> <li>• computer-based data acquisition and control</li> <li>• The training system should have hardware modules to teach the principles of dc and ac power electronics including DC Power Electronics, DC Motor Drives, Single-Phase AC Power Electronics, Three-Phase AC Power Electronics, Thyristor Power Electronics, Three-Phase Induction Motor Starters, Three-Phase Motor Drives, Hydropower Electricity Generation, High-Voltage DC Transmission Systems</li> </ul>		
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4	<b>Laser Measuring Tape</b>	3	<ul style="list-style-type: none"> <li>• Measuring Range: 0.05 - 40m</li> <li>• Measuring Accuracy: 1/16 inches</li> <li>• Measuring Units: m / ft / in</li> <li>• Memory: 10 Values</li> <li>• Indoor and Outdoor Use</li> <li>• Area Measurement, Volume Measurement, Length Measurement</li> </ul>		
5	<b>LCD module</b> Include: 1 x LCD Display Module	5	<ul style="list-style-type: none"> <li>• LCM type: characters, 2 line x 16 lines</li> <li>• Voltage: 5V DC</li> <li>• Display: TFT LCD module with built-in LCD controller</li> <li>• Backlight: blue</li> <li>• Interface: 4-bit and 8-bit parallel interface</li> </ul>		
6	<b>Relay Module</b> Include: 1 x relay module (1 channel) 1 x relay module (2 channel) 1 x relay module (4 channel) 1 x relay module (8 channel)	50	<ul style="list-style-type: none"> <li>• General purpose relay module</li> <li>• 5v 1 to 8 channel relay module</li> <li>• Power Source: DC</li> <li>• Contact Load: Low Power</li> <li>• Theory: Solid State Relay</li> </ul>		

7	<p>DC Motor</p> <p>Include: 1 x 12V DC motor</p>	100	<ul style="list-style-type: none"> <li>• Voltage: DC 12V</li> <li>• No-load speed : 15000 RPM</li> <li>• Model Number: 771 Dc motor</li> <li>• Type: Micro Motor</li> <li>• Construction: Permanent Magnet</li> <li>• Motor Output Power: 10-50W</li> <li>• Continuous Current(A): 6-12A</li> </ul>		-
8	<p><b>Resistor Assortment Kit</b></p> <p>Include: 10R, 15R, 20R, 27R, 33R, 36R, 39R, 47R, 56R, 75R, 100R, 15R, 180R, 200R, 220R, 270R, 300R, 330R, 360R, 47R, 56R, 750R, 820R, 910R, 1k, 1.5k, 1.8k, 2k, 2.2k, 2.4k, 2.7k, 3k, 4.7k, 10k, 15k</p>	100	<ul style="list-style-type: none"> <li>• Type: Fixed Resistor</li> <li>• Resistance Tolerance: <math>\pm 1\%</math></li> <li>• Rated power: 3w</li> <li>• Material: metal film</li> <li>• Package Type: Through Hole</li> </ul>		-
9	<p><b>16 Channel 12-bit PWM Servo Motor Driver</b></p> <p>Include: 1 x 16 Channel PWM Servo Motor Driver</p>	30	<p>Voltage: DC5-10V</p> <p>Chip power supply voltage: 2.8V-5.5V</p> <p>Supports IIC and serial communication</p> <p>Frequency: 40-1000Hz</p> <p>Channel number: 16 channels</p> <p>Resolution bit: 12 bits</p>		-

10	<p><b>74 Series integrated circuits</b></p> <p>Include:</p> <ul style="list-style-type: none"> <li>1 x 7400 quad 2-input NAND</li> <li>1 x 7404 hex inverter</li> <li>1 x 7408 quad 2-input AND</li> <li>1 x 7432 quad 2-input OR</li> <li>1 x 7402 quad 2-input NOR</li> <li>1 x 7447 BCD to 7-Segment Decoder</li> <li>1 x 7448 BCD to 7-Segment Decoder</li> <li>1 x 7490 decade counter</li> <li>1 x 7493 4bit binary counter</li> <li>1 x 7491 8-bit shift register</li> <li>1 x 74269 8-bit bidirectional binary counter</li> <li>1 x 74590 8-bit binary counter</li> <li>1 x 74137 3-to-8 mux</li> <li>1 x 74238</li> <li>1 x 7482 2-bit adder</li> <li>1 x 7483 4-bit adder</li> <li>1 x 74171 D-flip-flop</li> </ul>	200	<ul style="list-style-type: none"> <li>• Package: Plastic Dual-In-Line Package (PDIP)</li> <li>• Supply Voltage: 7V</li> <li>• Input Voltage: 5.5V</li> <li>• Operating Free Air Temperature: 0°C to +70°C</li> <li>• Storage Temperature Range: - 65°C to +150°C</li> </ul>		
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11	<p>Multimeter</p> <p>Include: 1 x Multimeter 1 x Test lead set</p>	15	<ul style="list-style-type: none"> <li>• LCD display with high accuracy</li> <li>• Product can measures DC/AC current, voltage, resistance, capacitance, hFE, diode</li> <li>• Overload indication and auto power off function</li> <li>• DC Voltage:200mV to 600V <math>\pm(0.5\%+2 \text{ dig})</math></li> <li>• AC Voltage: 600mV to 600V <math>\pm(0.8\%+3\text{dig})</math></li> <li>• DC Current: 0.6mA to 600mA <math>\pm(0.8\%+2\text{dig})</math></li> <li>• DC Current: 20.00A <math>\pm(1.2\%+3\text{dig})</math></li> <li>• AC Current: 60mA to 20A</li> <li>• Resistance: 600/60M</li> <li>• Capacitance: 60.00nF / 600.0nF / 6.000<math>\mu</math>F / 60.00<math>\mu</math>F / 600.0<math>\mu</math>F / 6.000mF / 60.00mF</li> <li>• Continuity Buzzer: yes</li> <li>• Auto ranging and back light</li> <li>• Automatic-manual Range Selection</li> <li>• Auto Power-off</li> </ul>		
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