



Electronics Corporation of India Limited
A Government of India Enterprise
CONTROL & AUTOMATION DIVISION-PURCHASE
ECIL Post, Hyderabad-500 062.

ENQUIRY No. EC/PUR/CAD/

1964/930237

DATE: 2015.12.02

DUE DATE: 2016.01.07 (2016-01-07)

e-mail:
EXTRA COPY

Contact: D.P. RAO. SM

Dear Sir(s),

Kindly submit your quotation in a Sealed Envelope Superscribing Enquiry No. and Due Date for the supply of the Following items as per terms and conditions overleaf to PURCHASE MANAGER - CONTROL & AUTOMATION DIVISION ECIL, HYDERABAD-62. QUOTATIONS AGAINST EACH TENDER SHALL BE SENT IN SEPARATE ENVELOPE QUOTATIONS RECEIVED AFTER THE DUE DATE AND TENDERS SENT IN OPEN/UNSUPERSCRIBED ENVELOPE WILL BE REJECTED. PLEASE SEND REGRET LETTER, IF YOU ARE NOT ABLE TO QUOTE TO CONTINUE TO KEEP YOUR NAME IN OUR MAILING LIST.

IMPORTANT INSTRUCTIONS

Parties must give the following information otherwise offer may be rejected.

1. Unit Rate and Terms of price
2. Quantity discount if any
3. Rate of Excise Duty, Sales Tax if any
4. Firm Delivery schedule
5. Mode of despatch
6. Estimated Packing and Forwarding Charges
7. Validity of quotation
8. Terms of Payment
9. Sales Tax Registration Number/VAT and Service Tax Regn. No.
10. SSI/NSI Regn. No.

Sl.No.	Material Description and Specification	Estimated Requirement	
		Unit Code	Quantity
1	HV IGBT MODULES WITH FREEWHEELING (ANTI-PARALLEL) DIODES DETAILS AS PER THE ANNEXURE.	Nos.	60
2	FAST RECOVERY DIODE MODULES DETAILS AS PER THE ANNEXURE.	Nos.	30
3	CAPSULE TYPE RECTIFIER DIODES DETAILS AS PER THE ANNEXURE.	Nos.	30
<u>Special Notes.</u>			
1. Data sheet/Catalogues shall be enclosed to your offer.			
2. A Certificate of Compliance shall be submitted along with the consignment.			
3. Our Terms of Payment : 90% payment will be made within 60 days of receipt of material at ECIL, Balance 10% payment will be made within 30 days of acceptance.			
4. If you are unable to quote, send regret letter positively by mail. Our Mail ID dprao@ecil.co.in enable us to keep you in mailing list.			
5. Please quote Terms of Price as Free Delivery to our Stores.			
6. This is a TWO PART BID Mechanism.			
a) Technical Bid & b) Price Bid.			
7. Commercial Terms and Conditions as per Annexure.			

- NOTE:** 1. CERTIFICATE OF COMPLIANCE/BATCH CERTIFICATE/CCOE/CMRI/ATX/ WARRANTY TEST CERTIFICATE SHALL BE FURNISHED. PLEASE CONFIRM.
2. DATA SHEETS (CATALOGUES) SHALL BE SUPPLIED WITH THE QUOTATION.
3. IF THE MATERIAL IS COVERED UNDER DGS & D RATE CONTRACT. PLEASE QUOTE THE RATES ACCORDINGLY.
4. IF THE MATERIAL IS COVERED UNDER EXCISE, FURNISH EXCISE TARIFF NUMBER AND CLASSIFICATION.

Yours faithfully,

For Electronics Corporation of India Limited

वर्ष प्रबंधक/प्रमुख
क्रय, एम एम ई सी एल
Purchase Manager
ई सी आई एल, हैदराबाद
ECIL, HYDERABAD-500 062.

S No.	Item	Quantity
1.	<p>HV IGBT modules with freewheeling (anti-parallel) diodes</p> <p>Application: 3 level inverter</p> <p>Specifications:</p> <p>Transistor:</p> <p>Minimum collector-emitter voltage for T_{vj} from 0°C - 125°C : 4.5kV</p> <p>Minimum continuous DC voltage withstand (DC stability) at T_{vj} of 120°C: 3kV (for failures not more than 100 FITs)</p> <p>Continuous DC current at T_{vj} of 125°C: 1200A</p> <p>Reverse bias safe switching current at terminal voltage of 4.2kV: 1000A at T_{vj} of 110°C</p> <p>$T_{vj}(\text{op})$: 125°C</p> <p>Rise time at 1000A, 3000V, $T_{vj}=125^{\circ}\text{C}$, min gate resistance: 0.3us</p> <p>Fall time at 1000A, 3000V, $T_{vj}=125^{\circ}\text{C}$, min gate resistance: 0.5us</p> <p>Max switching energy per pulse at 1000A, 3000V, $T_{vj}=125^{\circ}\text{C}$ and twice the min. gate resistance: 12 J</p> <p>Minimum short circuit with stand duration: 10us at $T_{vj}=125^{\circ}\text{C}$ and $V_{ce}=3000\text{ V}$</p> <p>Maximum J-HS thermal resistance with thermal compound: 0.018 K/W</p> <p>Min. Isolation voltage: 10kV rms, 50Hz for 1min</p>	60

Freewheeling (anti parallel) diode

Min. repetitive peak reverse voltage: 4.5kV

Min Continuous DC current at T_{vj} of 125C: **1200A**

Reverse recovery time

$I_f=1000A$, $di/dt=5kA/us$, $V_r=3000V$, $T_{vj}=125C$: $\leq 2us$

Reverse recovery charge at $I_f=1000A$, $di/dt=5kA/us$,
 $V_r=3000V$, $T_{vj}=125C$: $\leq 2000uC$

Peak reverse recovery current at $I_f=1000A$, $di/dt=5kA/us$,
 $V_r=3000V$, $T_{vj}=125C$: **1700A**

RBSOA: Reverse bias safe switching current at voltage
of 3kV, $T_{vj}=125C$: $\geq 800A$ when $di/dt=5kA/us$

Maximum J-HS thermal resistance with thermal
compound: 0.035 K/W

Min. Isolation voltage: 10kV rms, 50Hz for 10 sec

Information to be supplied by bidder along with the quotation:

- 1) Complete data sheet,
- 2) Critical parameters given in the table below.

S No	Parameter	Value assured
1	Failure rate at continuous DC voltage of 3000V and junction temperature of 110 deg C	
2	Number of short circuits the device can withstand at V_{ce} of 3000V	
3	Short circuit withstand period	
4	Transistor failure rate	
5	Diode failure rate	
6	List of equipments in which the devices have been used	
7	List of reputed customers and the contact persons	

Signature

Fast Recovery Diode Modules

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Specifications:

Min. repetitive peak voltage: **4.5kV**

DC stability: **3000V**

Min Continuous DC current at T_{vj} of 125C: **800A**

Reverse recovery time $I_f=800A$, $di/dt=3kA/us$, $V_r=2800V$,
 $T_{vj}=125C: \approx 2us$

Reverse recovery charge at $I_f=800A$, $di/dt=3kA/us$, $V_r=3000V$,
 $T_{vj}=125C \leq 2000uC$

Reverse bias safe switching current at voltage of 3kV,
 $T_{vj}=125C: \geq 800A$

Maximum J-HS thermal resistance with thermal compound:
0.04K/W

Min. Isolation voltage: **10kV rms, 50Hz for 10 sec**

Information to be supplied by bidder along with the quotation:

- 1) Complete data sheet,
- 2) Critical parameters given in the table below.

S No	Parameter	Value assured
1	Failure rate at continuous DC voltage of 3000V and junction temperature of 110 deg C	
2	Number of short circuits the device can withstand at V_{ce} of 3000V	
3	Short circuit withstand period	
4	List of equipments in which the devices have been used	
5	List of reputed customers and the contact persons	

Capsule type rectifier diodes

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Application: Three phase full wave rectifier

Specifications:

$V_{RRM} \geq 6.8 \text{ kV}$,

I_{FAVM} (120 degree conduction) at TC of $100^\circ\text{C} \geq 700\text{A}$

I^2t for fuse selection $\geq 3 \cdot 10^6 \text{ A}^2 \text{ s}$,

Surge current at T_{vj} max for $t_p = 10\text{ms} \geq 20,000\text{A}$

Information to be supplied by bidder along with the quotation:

- 1) Complete data sheet,
- 2) Critical parameters given in the table below

S No	Parameter	Value assured
1	Failure rate at rated voltage and junction temperature of 125°C	
2	Number of short circuits the device can withstand	

ANNEXURE

Commercial Terms and Conditions

1. Earnest Money Deposit: EMD shall be submitted in the form of Bank Guarantee / DD for the value of Rs. 2.0 Lakhs along with the quotation. In respect of Small Scale Industries/Registered Approved Vendors/Government Departments, waiver of EMD may be considered as per Government guidelines. In such cases vendor should submit sufficient proof of documents. EMDs are to be submitted in a separate cover. If EMDs not submitted those quotations will not be considered.
 2. Delivery Schedule: Material is to be required within 2 months from the date of release of purchase order.
 3. Payment Terms: 90% payment within 60 days from the date of receipt of material and balance 10% within 30 days of acceptance.
 4. Warranty: Should be provided for 36 months.
 5. Performance Bank Guarantee: Shall be executed for 10% of the order value during the warranty period.
 6. Confidential Information and Non-Disclosure Agreement shall be provided on Rs.100/- Non-Judicial Stamp Paper.
 7. Predespatch Inspection: Required at source.
 8. Liquidated Damages / Penalty Clause: In the event of any delay in supply beyond the stipulated delivery schedule, ECIL, at their option, LD will be recovered @ ½% per week on the value of undelivered goods, subject to a maximum 10% of the total order value.
 9. Risk Purchase Clause: In the event of any failure of the seller to comply with the purchase order terms, the buyer has a right to cancel the order and proceed with an alternate source. In the event of proceeding with such an alternate source, the default vendor shall be liable to bear the extra cost which may be incurred by the buyer.
 10. Arbitration Clause : All disputes or differences whatsoever arising between two parties out of relating to the construction meaning and operation of effect of this contract or the breach of them shall be settled by arbitration in accordance with the rules of arbitration of the Indian Council of Arbitration is at Hyderabad/Secunderabad jurisdiction.
 11. ECIL reserves the right to split the order by matching the L1 prices.
- In respect of Small Scale Industries/Registered Approved Vendors/Government Departments, waiver of EMD may be considered as per Government guidelines. In such cases, the waiver

should be accorded by the Divisional Head with the concurrence of the Divisional Finance. In the tender documents, it should be clearly informed that if any bidder makes a request for treating his available credit balance with ECIL, if any, as the requisite EMD in respect of a new quotation, such adjustment request will not be entertained and tender would be treated as invalid.