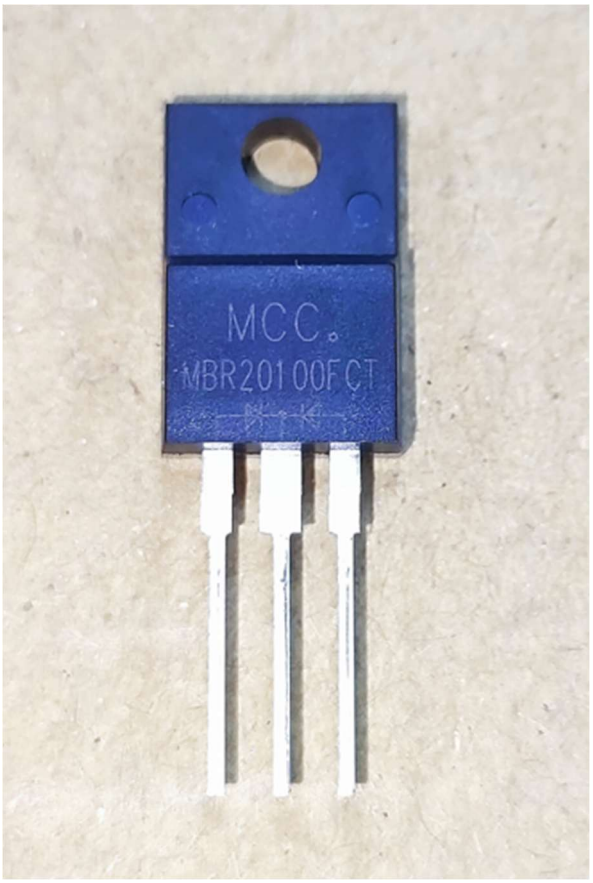
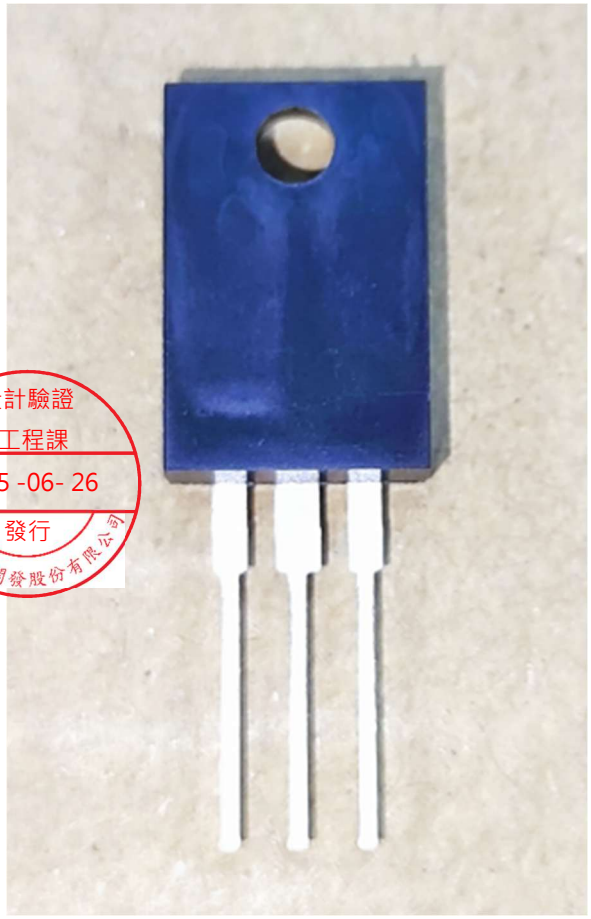




設計驗證
工程課
2025 -06- 26
發行

承　認　書

SPECIFICATION FOR APPROVAL

CUSTOMER: 鈺緯科技開發股份有限公司

PRODUCTS: **MCC**

PART NUMBER: **3D20100001X** (D0180)
MBR20100FCT-BP

SAMPLE QUANTITY: **10 EA**

ISSUED DATE: 06/17/25　　APPROVED DATE:

APPROVED	REFERENCE
設計驗證 工程課 2025 -06- 26 發行 鈺緯科技開發股份有限公司	宇得國際企業有限公司 TEL： 2911-3323 台北縣新店市寶高路13號4樓

Unit-Teek
宇得國際企業有限公司　Unit-Teek ENTERPRISE CO., LTD.
台灣新北市新店區寶高路13號4樓　TEL: 886-2-2911-3323　FAX: 886-2-2911-3320
4F., No.13, Baogao Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)　E-Mail: unitt@ms25.hinet.net

Features

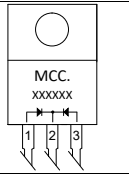
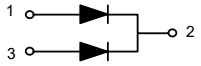
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix Designates Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Guard Ring For Transient Protection
- High Surge Capacity,High Current Capability

20 Amp Schottky Barrier Rectifier 45 to 100 Volts

Maximum Ratings @ 25°C (Unless Otherwise Specified)

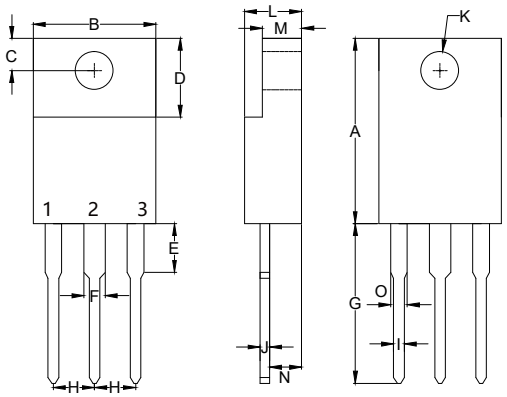
Parameter	Symbol	Value			Unit
		MBR2045FCT	MBR2060FCT	MBR20100FCT	
Peak Repetitive Reverse Voltage	V_{RRM}	45	60	100	V
Working Peak Reverse Voltage	V_{RWM}				
DC Blocking Voltage	V_R				
RMS Reverse Voltage	V_{RMS}	31.5	42	70	V
Average Rectified Forward Current Per Diode Per Device	$I_{F(AV)}$	10 20			A
Non-Repetitive Peak Surge Current @ 8.3ms Half Sine Wave	I_{FSM}	150			A
Current Squared Time @1ms≤t≤8.3ms	I^2t	93			A^2s

Part Number	Marking Code
MBR2045FCT	MBR2045FCT
MBR2060FCT	MBR2060FCT
MBR20100FCT	MBR20100FCT

Marking Diagram	Internal Structure
 Marking Code: XXXXXX	

Note: 1. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.

ITO-220AB



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.567	0.642	14.40	16.30	
B	-----	0.421	-----	10.70	
C	0.085	0.128	2.15	3.25	
D	0.248	0.272	6.30	6.90	
E	-----	0.177	-----	4.50	
F	-----	0.071	-----	1.80	
G	0.500	0.539	12.70	14.20	
H	0.100		2.55		
I	-----	0.035	-----	0.90	
J	-----	0.032	-----	0.80	
K	0.102	0.150	2.60	3.80	Φ
L	-----	0.201	-----	5.10	
M	-----	0.140	-----	3.56	
N	0.083	0.126	2.10	3.20	
O	-----	0.071	-----	1.80	

Thermal characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
T_J	Operating Junction Temperature Range		-55		150	°C
T_{stg}	Storage Temperature Range		-55		150	°C
$Rth_{(J-C)}$	Thermal Resistance from Junction to Case	Per Leg		4		°C/W
$Rth_{(J-A)}$	Thermal Resistance from Junction to Ambient	Without Heatsink, Free air		60		°C/W

Mechanical Data

Recommended Mounting Torque: 5in·lbs

Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage Per Diode						
MBR2045FCT	V_F	I_F=10A;T_J=25°C		0.55	0.65	V
		I_F=10A;T_J=125°C		0.50		
MBR2060FCT		I_F=10A;T_J=25°C		0.71	0.75	
		I_F=10A;T_J=125°C		0.62		
MBR20100FCT		I_F=10A;T_J=25°C		0.80	0.85	
		I_F=10A;T_J=125°C		0.67		
Reverse Current Per Diode						
MBR2045FCT & MBR2060FCT	I_R	at Rated V_R;T_J=25°C			0.1	mA
		at Rated V_R;T_J=125°C			20	
MBR20100FCT		at Rated V_R;T_J=25°C			0.01	
		at Rated V_R;T_J=125°C			5	
Junction Capacitance Per Diode						
MBR2045FCT	C_J	V_R=4V;f=1MHz;T_J=25°C		470		pF
MBR2060FCT				275		
MBR20100FCT				270		

Curve Characteristics

Fig. 1 - Forward Current Derating Curve

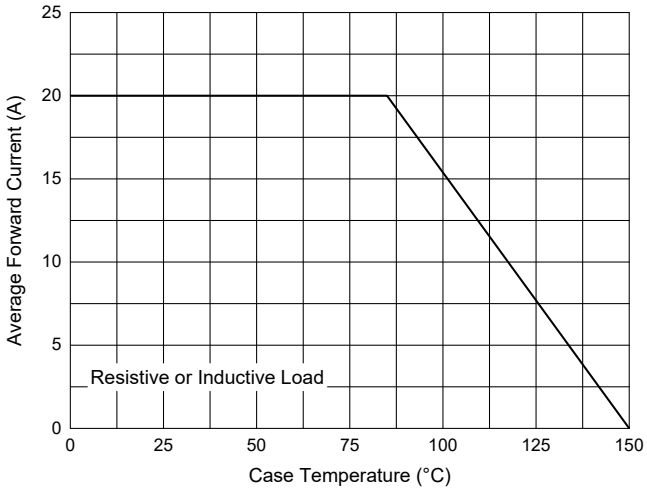


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

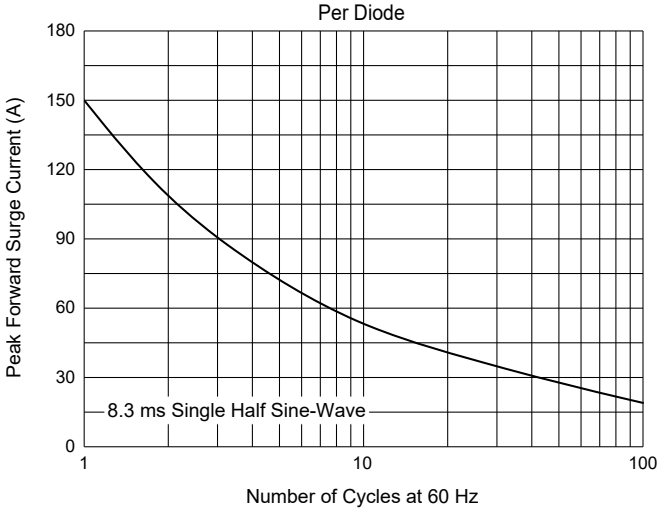


Fig. 3 - Typical Forward Characteristics Per Diode

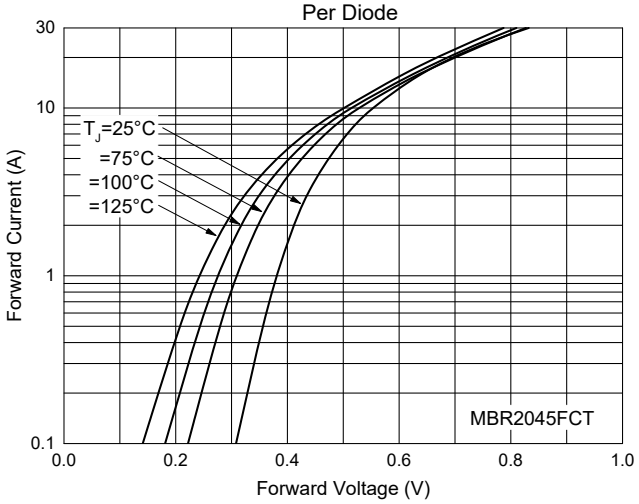


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

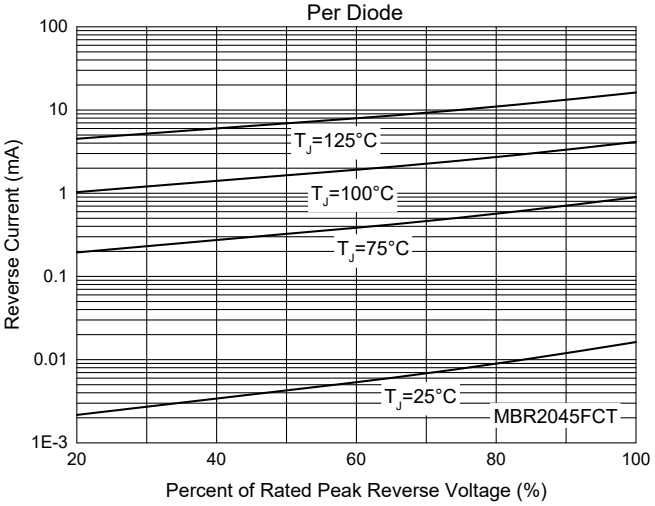


Fig. 5 - Typical Forward Characteristics Per Diode

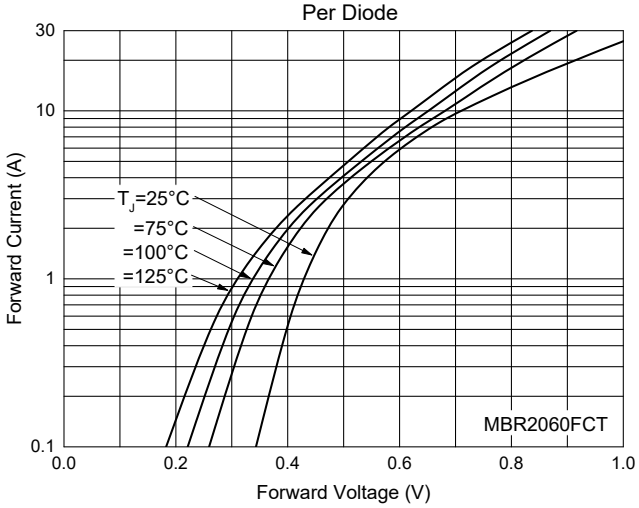
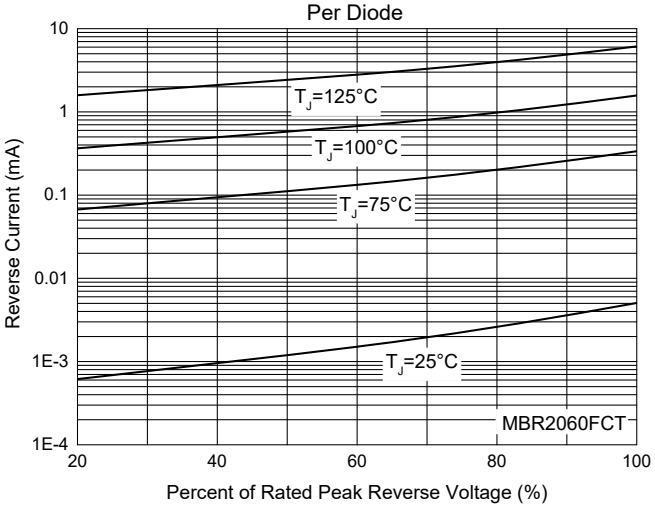


Fig. 6 - Typical Reverse Leakage Characteristics Per Diode



Curve Characteristics

Fig. 7 - Typical Forward Characteristics
Per Diode

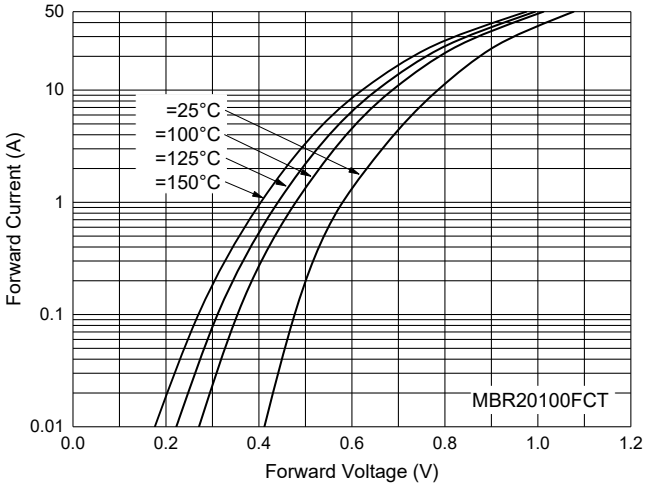


Fig. 8 - Typical Reverse Leakage Characteristics
Per Diode

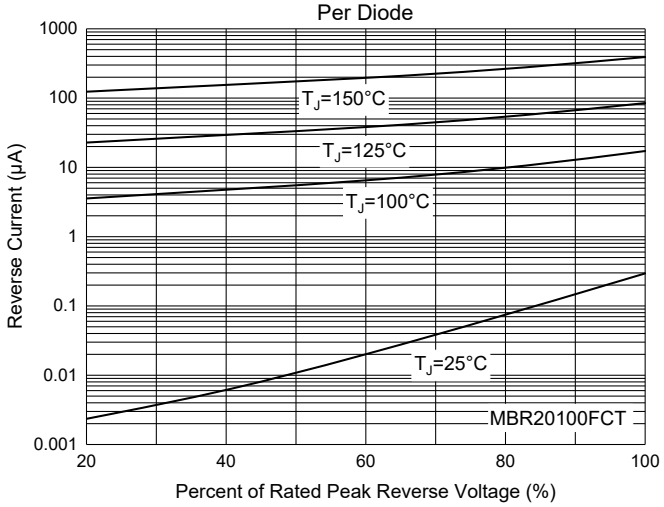


Fig. 9 - Typical Capacitance Characteristics
Per Diode

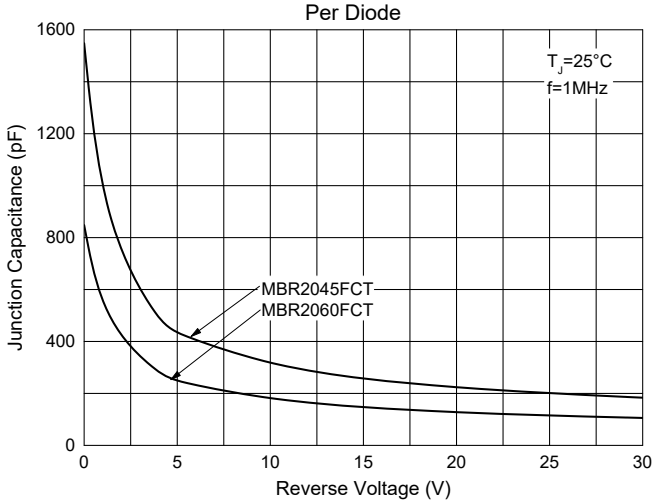
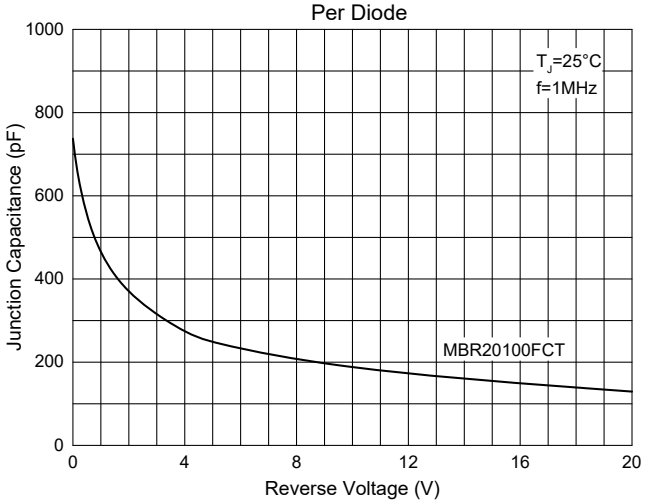


Fig. 10 - Typical Capacitance Characteristics
Per Diode



Ordering Information

Device	Packing
Part Number-BP	Bulk:50pcs/Tube,1Kpcs/Box,5Kpcs/Carton

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-BP-HF

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