

## Features

- High Surge Forward Current Capability
- Low Power Loss, High Efficiency
- 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
- Moisture Sensitivity Level 1

## Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 2.0°C/W Junction to Case

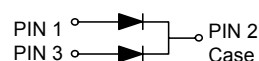
MCC Part Number	Device Marking	Maximum Recurrent Peak Reverse Voltage	Maximum RMS Voltage	Maximum DC Blocking Voltage
ST40100CT	ST40100CT	100V	70V	100V

## Electrical Characteristics @ 25°C Unless Otherwise Specified

Average Forward Current	$I_{F(AV)}$	40A	$T_C = 120^\circ\text{C}$
Peak Forward Surge Current	$I_{FSM}$	250A	8.3ms, Half Sine
Current Squared Time	$I^2t$	259A <sup>2</sup> S	1ms ≤ t < 8.3ms $T_J = 25^\circ\text{C}$ , Rating of Per Diode
Breakdown Voltage (NOTE 3)	$V_{BR}$	100V(Min) 105V(Min)	$I_R = 1.0\text{mA}$ $I_R = 10\text{mA}$
Forward Voltage Per Diode (Note 2)	$V_F$	0.47V(Typ) 0.54V(Typ) 0.67V(Typ) 0.73V(Max) 0.38V(Typ) 0.45V(Typ) 0.61V(Typ) 0.67V(Max)	$I_F = 5\text{A}, T_A = 25^\circ\text{C}$ $I_F = 10\text{A}, T_A = 25^\circ\text{C}$ $I_F = 20\text{A}, T_A = 25^\circ\text{C}$ $I_F = 5\text{A}, T_A = 125^\circ\text{C}$ $I_F = 10\text{A}, T_A = 125^\circ\text{C}$ $I_F = 20\text{A}, T_A = 125^\circ\text{C}$
Reverse Current Per Diode(NOTE 3)	$I_R$	9μA(Typ) 1000μA(Max) 10mA(Typ) 21mA(Typ) 45mA(Max)	$V_R = 70\text{V}, T_A = 25^\circ\text{C}$ $V_R = 100\text{V}, T_A = 25^\circ\text{C}$ $V_R = 70\text{V}, T_A = 125^\circ\text{C}$ $V_R = 100\text{V}, T_A = 125^\circ\text{C}$

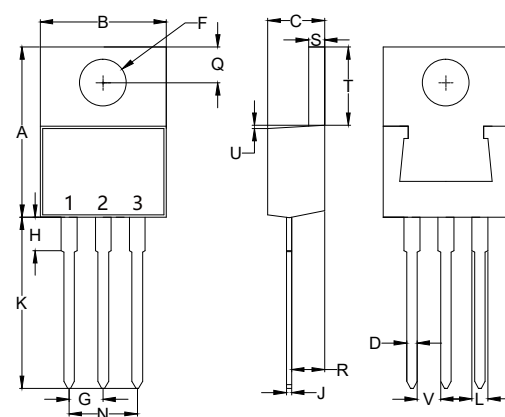
Note : 1. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.  
2. Pulse test: 300us pulse width, 1%duty cycle  
3. Pulse test: Pulse width ≤ 40ms.

## Internal Structure



# 40 Amp Low VF Schottky Barrier Rectifier 100 Volts

## TO-220AB



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.560	0.625	14.22	15.88	
B	0.380	0.429	9.65	10.90	
C	0.140	0.201	3.56	5.10	
D	0.020	0.045	0.51	1.14	
F	0.131	0.170	3.34	4.31	Φ
G	0.079	0.121	2.01	3.07	
H	-----	0.250	-----	6.35	
J	0.011	0.025	0.28	0.64	
K	0.500	0.580	12.70	14.73	
L	0.045	0.060	1.14	1.52	
N	0.158	0.242	4.02	6.14	
Q	0.087	0.135	2.22	3.43	
R	0.080	0.126	2.04	3.19	
S	0.045	0.055	1.14	1.39	
T	0.230	0.270	5.84	6.86	
U	-----	0.050	-----	1.27	
V	0.045	-----	1.15	-----	

## Curve Characteristics

Fig. 1 - Forward Current Derating Curve

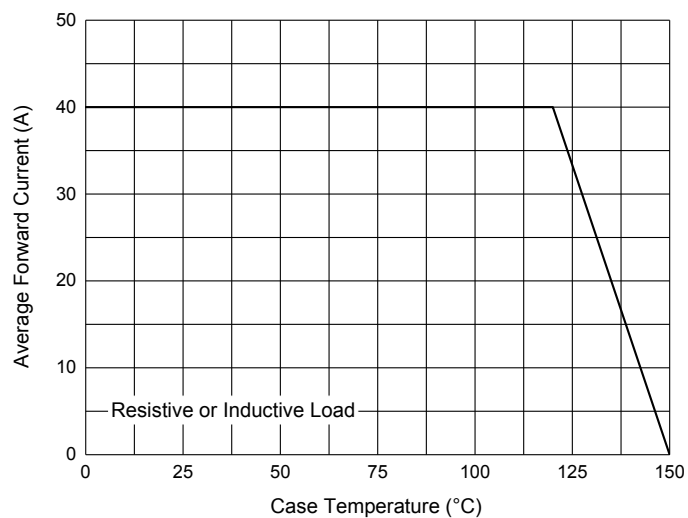


Fig. 2 - Typical Instantaneous Forward Characteristics

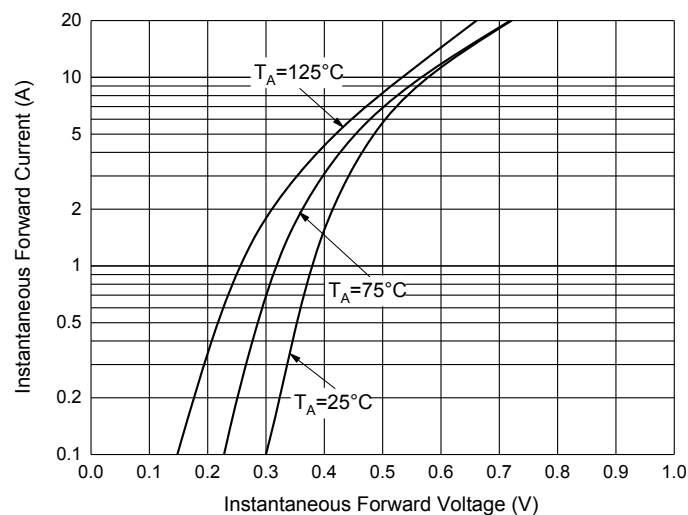
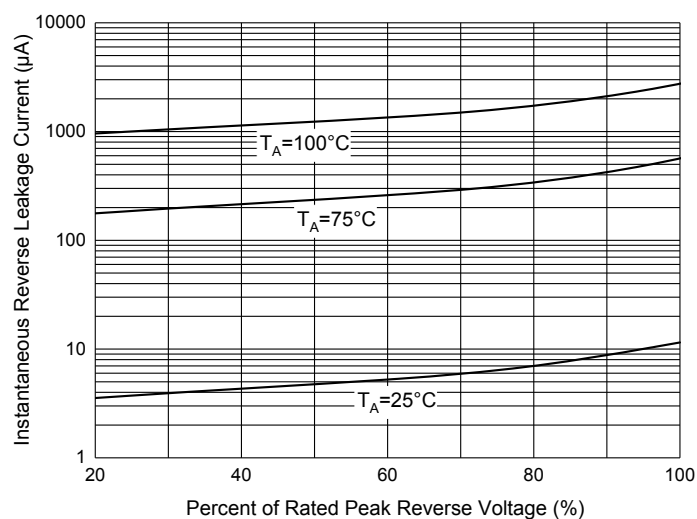


Fig. 3 - Typical Reverse Leakage Characteristics



## 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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