

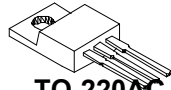
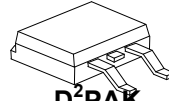
20TQ035/S/20TQ040/S/20TQ045/S SCHOTTKY RECTIFIER

Applications:

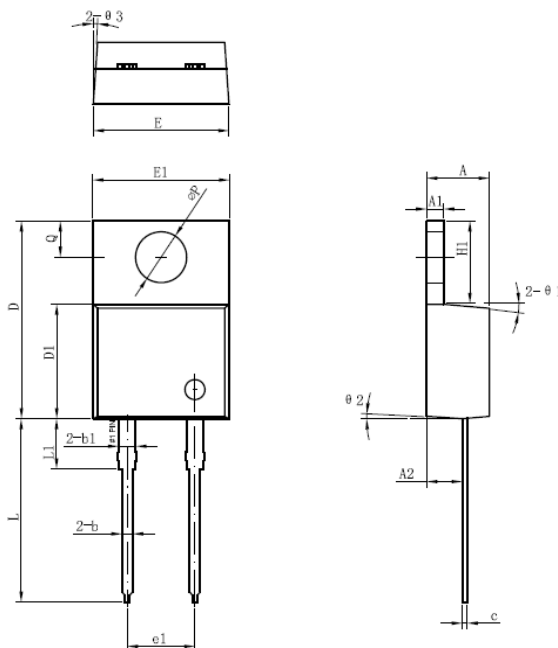
- Switching power supply
- Redundant power subsystems
- Converters
- Free-Wheeling diodes
- Reverse battery protection

Features:

- 150°C T_J operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- This is a Pb - Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

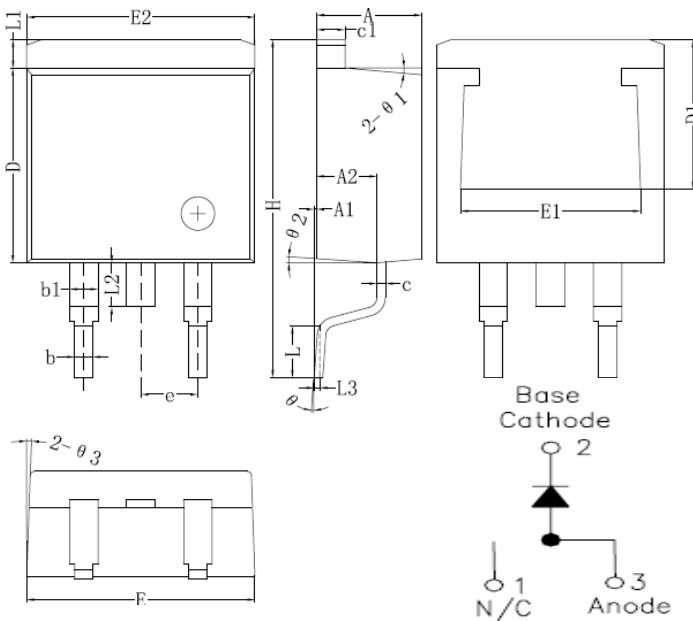
Case styles	
<p>20TQ...</p>  <p>TO-220AC</p>	<p>20TQ...S</p>  <p>D-PAK</p>

Mechanical Dimensions: In Inches / mm



Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
A1	1.17	1.27	1.37
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
D	14.64	14.94	15.24
D1	8.55	8.07	8.85
E	10.01	10.16	10.31
E1	9.98	10.18	10.38
e1		5.08	
H1	6.04	6.24	6.44
L	13.00	13.86	14.08
L1		3.80	
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
Ø1		5°	
Ø2		4°	
Ø3		4°	

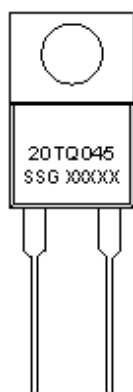
TO-220AC



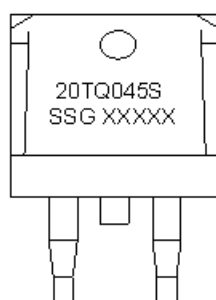
Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
A1	0	0.10	0.25
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
c1	1.17	1.27	1.37
D	8.55	8.70	8.85
D1	6.40		
E	10.01	10.16	10.31
E1	7.6		
E2	9.98	10.08	10.18
e		2.54	
H	14.6	15.1	15.6
L	2.00	2.30	2.70
L1	1.17	1.27	1.40
L2			2.20
L3		0.25BSC	
e	0	-	8°
e1		5°	
e2		4°	
e3		4°	

D²PAK

Marking Diagram:



20TQ045



20TQ045S

Where XXXXX is YYWWL

20TQ045 = Part Name
SSG = SSG
YY = Year
WW = Week
L = Lot Number

Cautions: Molding resin
Epoxy resin UL:94V-0

Ordering Information:

Device	Package	Shipping
20TQ045	TO-220AC (Pb-Free)	50pcs / tube
20TQ045S	D ² PAK (Pb-Free)	800pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V_{RRM}	-	35(20TQ035)	V
Working Peak Reverse Voltage	V_{RWM}		40(20TQ040)	
DC Blocking Voltage	V_R		45(20TQ045)	
Average Rectified Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=116^{\circ}C$, rectangular wave form	20	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	480	A



20TQ035/S
20TQ040/S
20TQ045/S

Technical Data
Data Sheet N0673, Rev. A

Green Products

Electrical Characteristics:

Characteristics	Symbol	Condition	Max.	Units
Forward Voltage Drop	V_{F1}	@ 20A, Pulse, $T_A = 25\text{ }^\circ\text{C}$ @ 40A, Pulse, $T_A = 25\text{ }^\circ\text{C}$	0.57 0.73	V
Forward Voltage Drop	V_{F1}	@ 20A, Pulse, $T_A = 75\text{ }^\circ\text{C}$ @ 40A, Pulse, $T_A = 75\text{ }^\circ\text{C}$	0.51 0.67	V
Reverse Current (per leg) *	I_{R1}	@ $V_R = \text{rated } V_R$ $T_J = 25\text{ }^\circ\text{C}$	2.7	mA
Reverse Current (per leg) *	I_{R1}	@ $V_R = \text{rated } V_R$ $T_J = 100\text{ }^\circ\text{C}$	105	mA
Junction Capacitance (per leg)	C_T	@ $V_R = 5\text{V}$, $T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 100\text{KHz} - 1\text{MHz}$	1650	pF
Typical Series Inductance (per leg)	L_S	Measured lead to lead 5 mm from package body	8.0	nH
Voltage Rate of Change	dv/dt	-	10,000	V/ μs

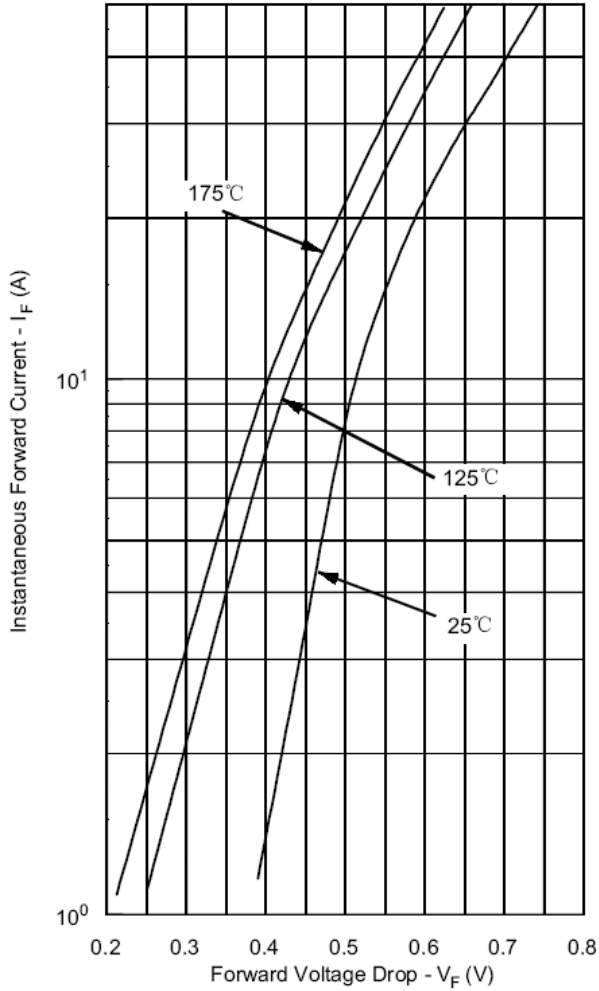
* Pulse Width < 300 μs , Duty Cycle <2%

Thermal-Mechanical Specifications:

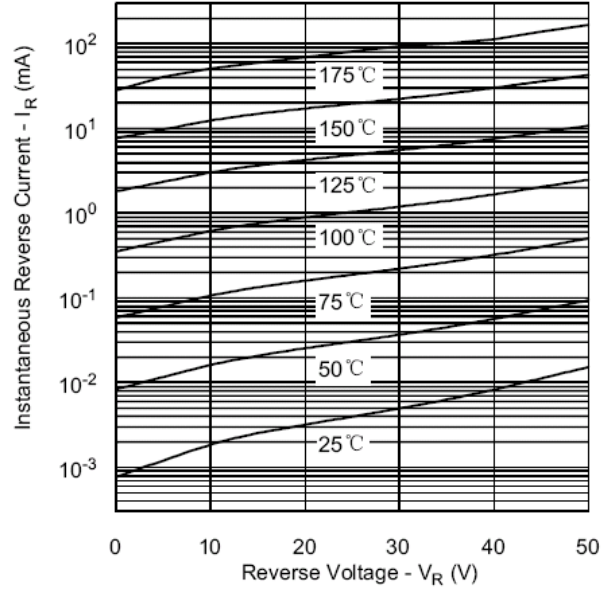
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T_J	-	-55 to +150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-	-55 to +150	$^\circ\text{C}$
Typical Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	1.5	$^\circ\text{C/W}$
Approximate Weight	wt	-	1.6	g
Case Style	TO-220AC D ² PAK ("S" for D ² PAK)			

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - sales@smc-diodes.com •

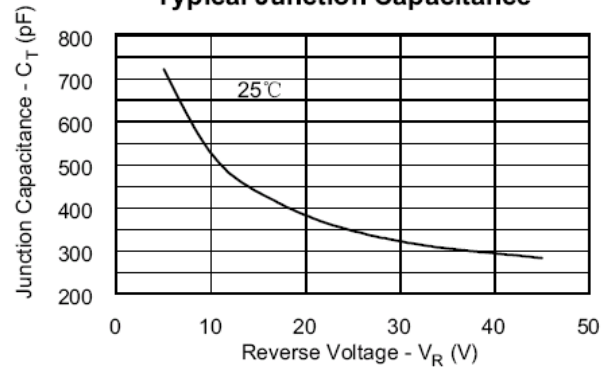
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance





20TQ035/S
20TQ040/S
20TQ045/S

Technical Data
Data Sheet N0673, Rev. A

Green Products

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