

Features

- Extremely low on-resistance $R_{DS(on)}$
- Excellent $Q_g \times R_{DS(on)}$ product(FOM)
- Qualified according to JEDEC criteria

Product Summary

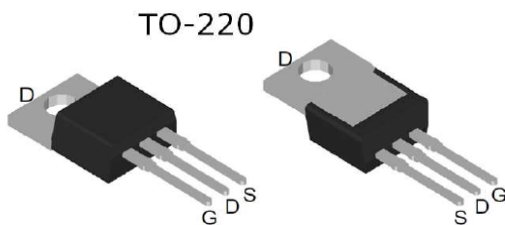
V_{DS}	95V
$R_{DS(on)}$ typ.	3.0mΩ
I_D	190A

Applications

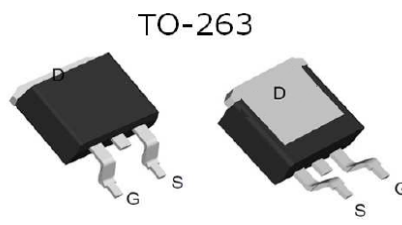
- Motor Drives
- SR (Synchronous rectification)
- DC/DC converter
- General purpose applications

100% DVDS Tested

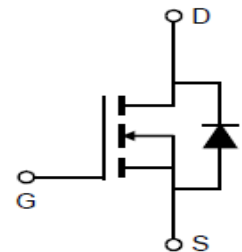
100% Avalanche Tested



SFP035N95C3



SFB032N95C3



Package Marking and Ordering Information

Part #	Marking	Package	Packing	Reel Size	Tape Width	Qty
SFP035N95C3	035N95C3	TO-220	Tube	N/A	N/A	50pcs
SFB032N95C3	032N95C3	TO-263	Reel&Tape	330×24.8mm	24mm	800pcs

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	95	V
Continuous drain current $T_C = 25^\circ\text{C}$ (Silicon limit) $T_C = 25^\circ\text{C}$ (Package limit) $T_C = 100^\circ\text{C}$ (Silicon limit)	I_D	240 190 152	A
Pulsed drain current ($T_C = 25^\circ\text{C}$, t_p limited by T_{jmax})	$I_{D \text{ pulse}}$	570	A
Avalanche energy, single pulse ($L=0.5\text{mH}$, $R_g=25\Omega$)	E_{AS}	1120	mJ
Gate-Source voltage	V_{GS}	± 20	V
Power dissipation ($T_C = 25^\circ\text{C}$)	P_{tot}	230	W
Operating junction and storage temperature	T_j, T_{stg}	-55~150	$^\circ\text{C}$
Soldering temperature, wave soldering only allowed at leads (1.6mm from case for 10s)	T_{sold}	260	$^\circ\text{C}$

Thermal Resistance

Parameter	Symbol	Max	Unit
Thermal resistance, junction – case.	R_{thJC}	0.72	°C/W
Thermal resistance, junction – ambient(min. footprint)	R_{thJA}^*	62	

Electrical Characteristic (at $T_j = 25\text{ °C}$, unless otherwise specified)

Parameter	Symbol	Value			Unit	Test Condition
		min.	typ.	max.		

Static Characteristic

Drain-source breakdown voltage	BV_{DSS}	95	101	-	V	$V_{GS}=0V, I_D=250\mu A$
Gate threshold voltage	$V_{GS(th)}$	2	3.0	4	V	$V_{DS}=V_{GS}, I_D=250\mu A$
Zero gate voltage drain current	I_{DSS}	-	-	1.0 5.0	μA	$V_{DS}=80V, V_{GS}=0V$ $T_j=125\text{ °C}$
Gate-source leakage current	I_{GSS}	-		±100	nA	$V_{GS}=\pm 20V, V_{DS}=0V$
Drain-source on-state resistance	$R_{DS(on)}$	-	3.0	3.5	mΩ	$V_{GS}=10V, I_D=50A$ TO-220
		-	2.7	3.2		TO-263

Dynamic Characteristic

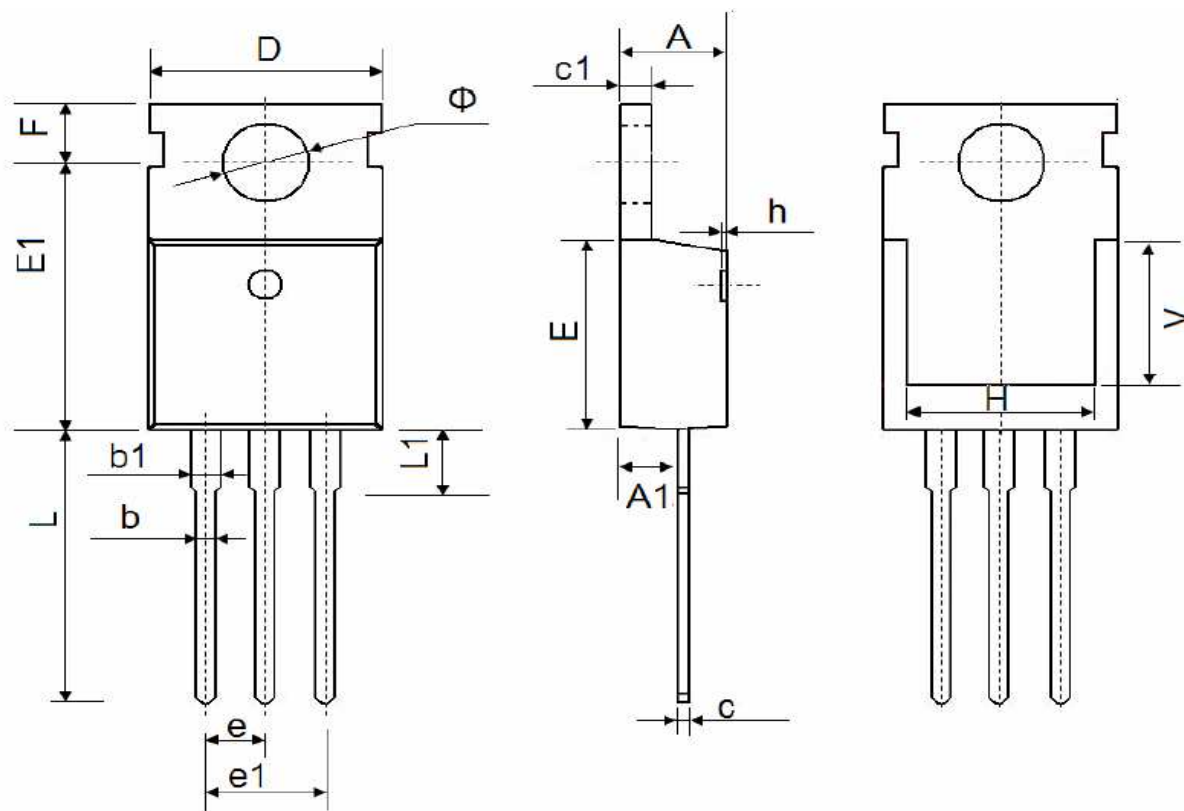
Input Capacitance	C_{iss}	-	6927	-	pF	$V_{GS}=0V, V_{DS}=25V$ $f=1MHz$
Output Capacitance	C_{oss}	-	2997	-		
Reverse Transfer Capacitance	C_{rss}	-	207	-		
Gate Total Charge	Q_G	-		-	nC	
Gate-Source charge	Q_{gs}	-	-	-		
Gate-Drain charge	Q_{gd}	-	-	-		
Turn-on delay time	$t_{d(on)}$	-	-	-	ns	
Rise time	t_r	-	-	-		
Turn-off delay time	$t_{d(off)}$	-	-	-		
Fall time	t_f	-	-	-		
Gate resistance	R_G	-	0.95	-	Ω	$V_{GS}=0V, V_{DS}=0V,$ $f=1MHz$

Body Diode Characteristic

Parameter	Symbol	Value			Unit	Test Condition
		min.	typ.	max.		
Body Diode Forward Voltage	V_{SD}	-	0.89	1.2	V	$V_{GS}=0V, I_{SD}=50A$
Body Diode Forward Current	I_S	-	-	-	A	
Body Diode Reverse Recovery Time	t_{rr}	-	-	-	ns	
Body Diode Reverse Recovery Charge	Q_{rr}	-	-	-	nC	

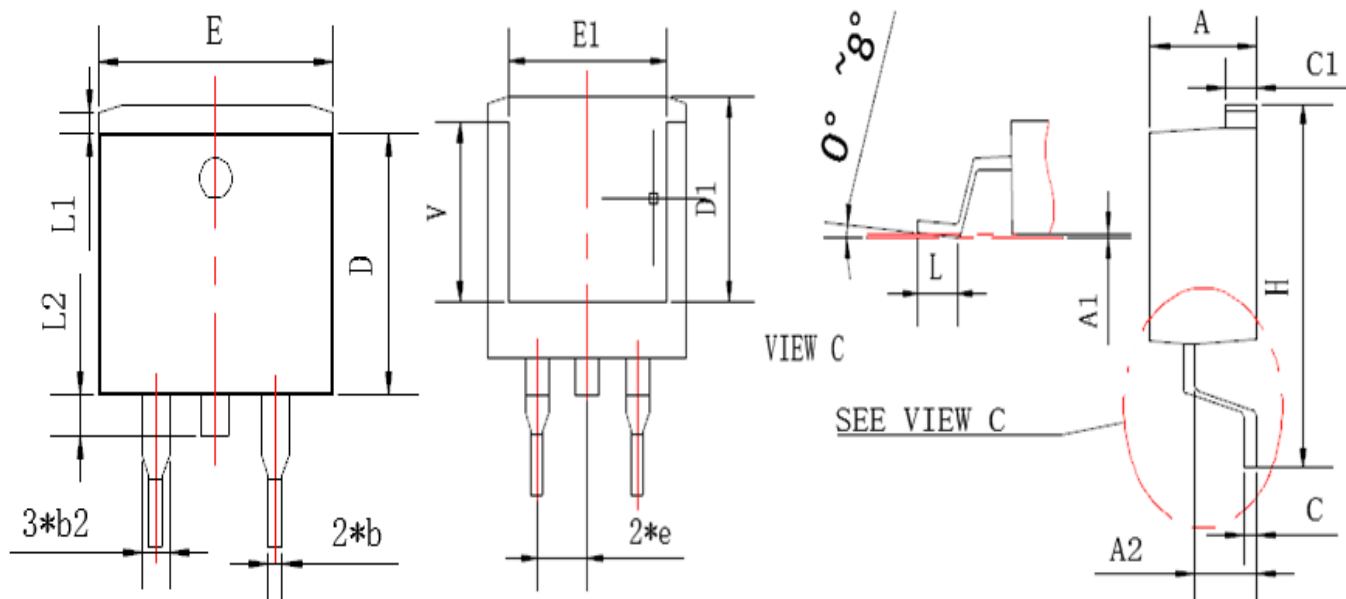
*The value of R_{thJA} is measured by placing the device in a still air box which is one cubic foot.

Package Outline: TO-220-3L



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.30	4.80	0.169	0.189
A1	2.20	2.70	0.087	0.106
b	0.70	0.95	0.276	0.037
b1	1.10	1.50	0.043	0.059
c	0.40	0.65	0.016	0.026
c1	1.20	1.45	0.047	0.057
D	9.70	10.30	0.382	0.406
E	8.75	9.65	0.344	0.380
E1	12.50	13.10	0.492	0.516
e	2.540 Typ.		0.100 Typ.	
e1	4.98	5.18	0.196	0.204
F	2.60	3.00	0.102	0.118
H	7.00	8.40	0.276	0.331
h	0	0.3	0	0.012
L	12.75	13.90	0.502	0.547
L1	2.85	3.40	0.112	0.134
V	6.700Ref.		0.264Ref.	
Φ	3.50	3.80	0.138	0.150

Package Outline: TO-263



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.30	4.80	0.169	0.189
A1	0.00	0.25	0.000	0.010
A2	2.35	2.70	0.093	0.106
b	0.70	0.94	0.028	0.037
b2	1.15	1.35	0.045	0.053
C	0.35	0.65	0.014	0.026
C1	1.20	1.40	0.047	0.055
D	8.40	9.40	0.331	0.370
D1	7.80	8.10	0.307	0.319
e	2.540 Typ.		0.100 Typ.	
E	9.85	10.30	0.388	0.406
E1	7.00	8.50	0.276	0.335
H	15.00	15.70	0.591	0.618
L	2.30	2.80	0.091	0.110
L1	0.90	1.30	0.035	0.051
V	6.700Ref.		0.264Ref	
L2	1.00	1.50	0.039	0.059

Revision History

Revision	Date	Major changes
1.0	2021-06-10	Release of test version.

Disclaimer

Unless otherwise specified in the datasheet, the product is designed and qualified as a standard commercial product and is not intended for use in applications that require extraordinary levels of quality and reliability, such as automotive, aviation/aerospace and life-support devices or systems.

Any and all semiconductor products have certain probability to fail or malfunction, which may result in personal injury, death or property damage. Customer are solely responsible for providing adequate safe measures when design their systems.

Scilicon Electric reserves the right to improve product design,function and reliability without notice.