

7A, 650V, N-Channel Power MOSFET
SRM7N65
General Description

The Sanrise SRM7N65 is a high voltage power MOSFET, which has better characteristics, such as fast switching time, low gate charge, low on-state resistance. Sanrise SRM7N65 break down voltage rating is 650V and it has a high rugged avalanche characteristics.

This power MOSFET is usually used at high speed switching applications in power supplies, high power LED lightings, TV power, Charger and Adapter, high efficient DC/DC converters and bridge circuits.

The SRM7N65 is available in TO-251, TO-252, TO-220F and TO-220C packages.

Features

- $R_{DS(ON)} = 1.11\Omega @ V_{GS} = 10V$.
- Fast switching capability
- Improved dv/dt capability, high ruggedness

Application

- High Power LED Lighting
- Charger / Adapter
- TV Power Supply

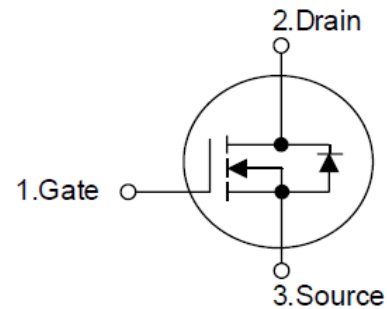
Symbol


Figure 1 Symbol of SRM7N65

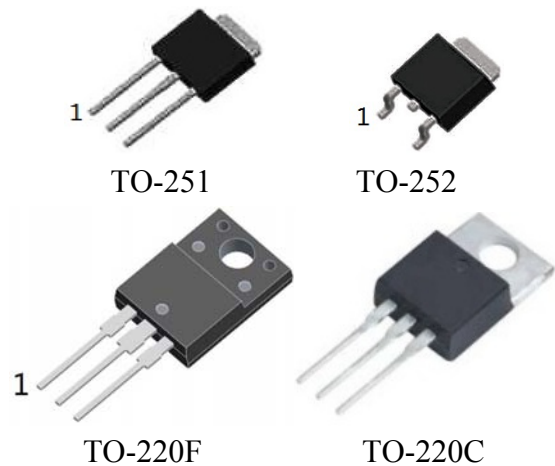
Package Type


Figure 2 Package Type of SRM7N65

Ordering Information

SRM7N65□□-□			
Circuit Type	_____	E1: Lead Free	
Package	_____	G1: Green	
D1: TO-251		Blank: Tube	
D: TO-252		TR: Tape & Reel	
TF: TO-220F			
TC: TO-220C			

Package	Part Number		Marking ID		Packing Type
	Lead Free	Green	Lead Free	Green	
TO-251	SRM7N65D1-E1	SRM7N65D1-G1	SRM7N65D1E1	SRM7N65D1G1	Tube
TO-252	SRM7N65DTR-E1	SRM7N65DTR-G1	SRM7N65DE1	SRM7N65DG1	Tape & Reel
TO-220F	SRM7N65TF-E1	SRM7N65TF-G	SRM7N65TFE1	SRM7N65TFG	Tube
TO-220C	SRM7N65TC-E1	SRM7N65TC-G	SRM7N65TCE1	SRM7N65TCG	Tube

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	650	V
Gate-Source Voltage	V_{GS}	± 30	V
Drain Current Continues	I_D	7	A
Operating Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-65 to 150	$^{\circ}\text{C}$
Lead Temperature (Soldering, 10 sec)	T_{LEAD}	260	$^{\circ}\text{C}$

Note:

1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

Electrical Characteristics

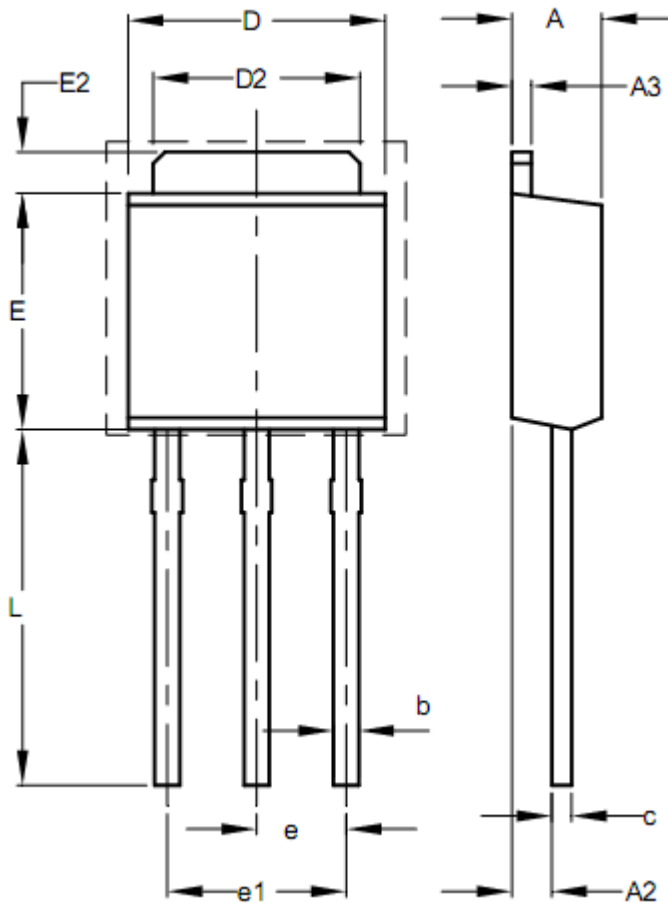
$T_J = 25^{\circ}\text{C}$, unless otherwise specified.

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Key Statistic Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0\text{V}, I_D=250\mu\text{A}$	650	691		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=650\text{V}, V_{GS}=0\text{V}$		30	800	nA
Gate-Body Leakage Current	Forward	I_{GSS} $V_{GS}=20\text{V}, V_{DS}=0\text{V}$		210	900	nA
	Reverse			270	900	uA
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	2.4	3	3.6	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=3.5\text{A}$		1.11	1.4	Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0\text{V}, I_{SD}=7\text{A}$		0.87	1.0	V
Continues Drain-Source Current	I_{SD}				7	A
Dynamic Characteristics						
Input Capacitance	C_{ISS}	$V_{DS}=25\text{V}, V_{GS}=0\text{V}, f=1\text{MHz}$		942	1100	pF
Output Capacitance	C_{OSS}			95	120	pF
Reverse Transfer Capacitance	C_{RSS}			9.9	12.6	pF

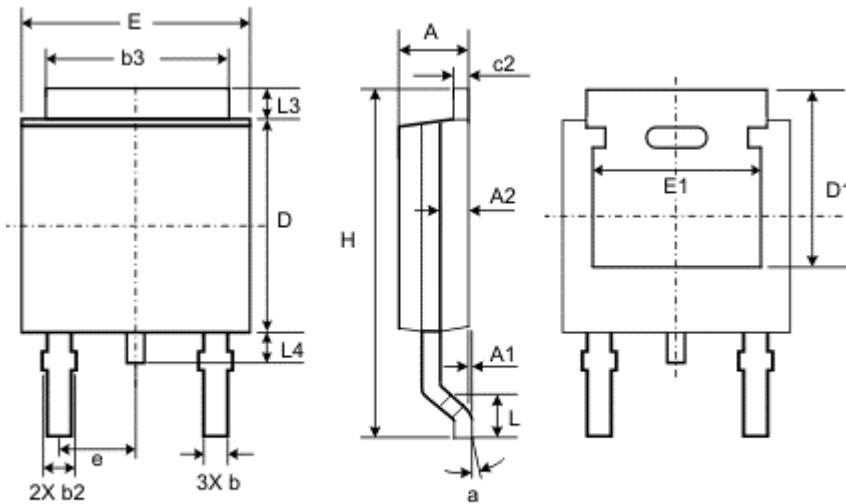
Mechanical Dimensions

TO-251

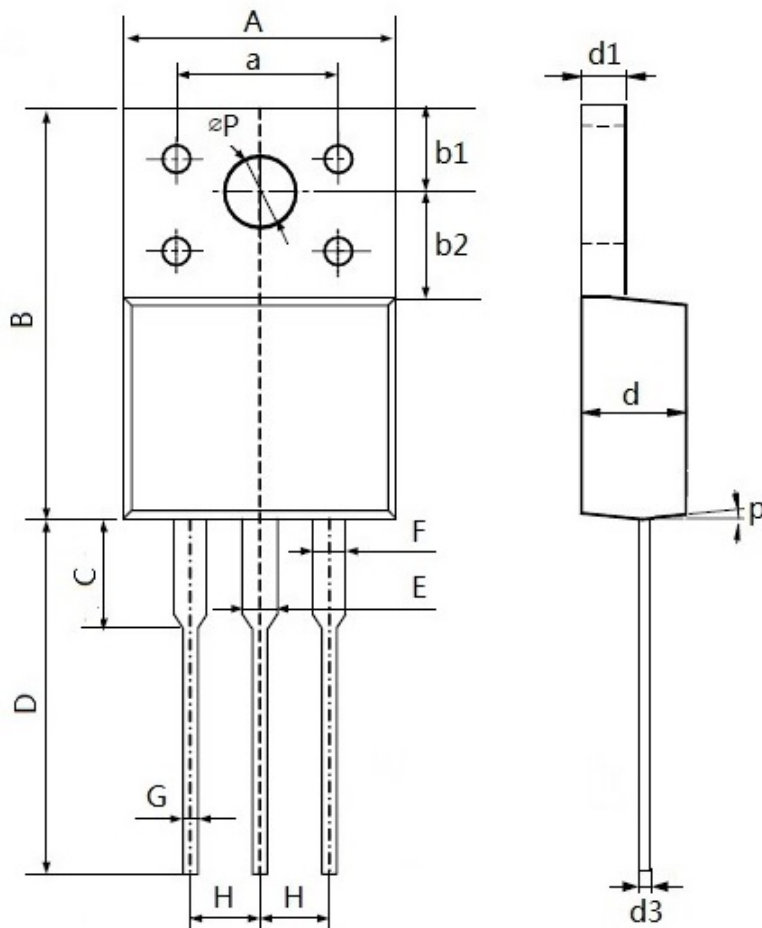
Unit: mm



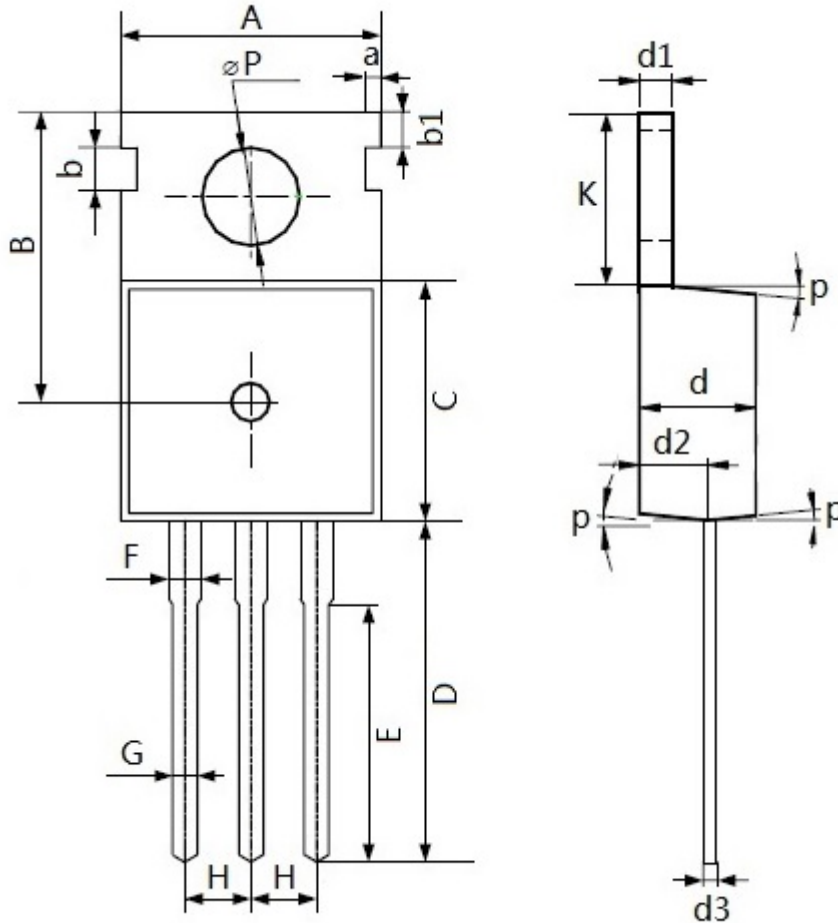
TO-251		
Dim.	Min.	Max.
A	2.20	2.40
A2	0.89	1.15
A3	0.45	0.55
b	0.75	0.85
c	0.45	0.57
D	6.40	6.75
D2	5.2	5.40
E	5.95	6.25
E2	0.9	1.25
e	2.24	2.34
e1	4.43	4.73
L	8.90	9.50
All dimensions is in mm.		

Mechanical Dimensions (Continued)
TO-252
Unit: mm


TO-252		
Dim.	Min.	Max.
A	2.19	2.39
A1	0.00	0.13
A2	0.97	1.17
b	0.64	0.88
b2	0.76	1.14
b3	5.21	5.46
c2	0.45	0.58
D	6.00	6.20
D1	5.21	-
e	2.286	2.286
E	6.45	6.70
E1	4.32	-
H	9.40	10.41
L	1.40	1.78
L3	0.88	1.27
L4	0.64	1.02
a	0°	10°
All dimensions is in mm.		

Mechanical Dimensions (Continued)
TO-220F
Unit: mm


TO-220F		
Dim.	Min.	Max.
A	9.7	10.3
a	6.9	7.1
B	14.7	16.0
b1	3.0	3.4
b2	3.39	3.90
C	2.79	4.50
D	12.5	13.5
d	4.3	4.9
d1	2.35	2.90
d3	0.45	0.60
G	0.55	0.90
H	2.54	2.54
E	1.1	1.5
F	1.0	1.4
øP	3.0	3.55
p	3°	3°
All dimensions is in mm.		

Mechanical Dimensions (Continued)
TO-220C
Unit: mm


TO-220C		
Dim.	Min.	Max.
A	9.80	10.20
a	0.55	0.65
B	10.90	11.10
b	1.60	1.80
b1	1.20	1.40
C	9.00	9.40
D	12.60	13.60
d	4.40	4.60
d1	1.20	1.40
d2	2.30	2.50
d3	0.40	0.60
E	9.60	10.60
F	1.27	1.27
G	0.70	0.90
H	2.54	2.54
K	6.30	6.70
$\varnothing P$	3.56	3.64
p	3°	3°
All dimensions is in mm.		



Sanrise Technology Limited Company

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