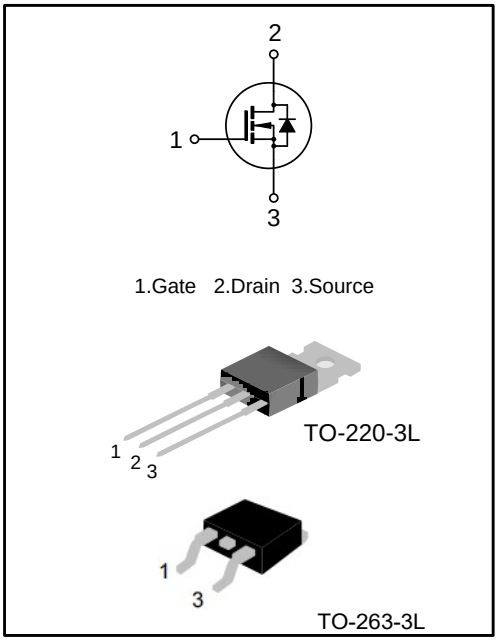
SR150N15

N-Channel Enhancement Mode MOSFET



Product Information

Features

- Surface-mounted package
- Super Trench
- Advanced trench cell design Applications
- LCD TV appliances
- LCDM appliances
- High power inverter system

Quick reference

- BV ≧ 150 V Ptot ≦ 147 W ID≦ 66 A
- RDS(ON) ≦ 18mΩ @ VGS = 10 V
- RDS(ON) ≦20mΩ @ VGS = 6 V

RoHS

Package Marking and Ordering Information:

Marking	Part #	Package	Packing	Qty.
SR150N15T	SR150N15T	TO-220	Tube	50 units
SR150N15S	SR150N15S	TO-263	Reel	3000 units

Limiting Values

Symbol	Parameter	Conditions	Min	Max	Unit
V_{DS}	Drain-Source Voltage	T_C = 25 ℃	150	-	V
V_{GS}	Gate-Source Voltage	T_C = 25 ℃	-	± 20	V
I_D*	Drain Current	T_C = 25 ℃, V_{GS} = 10 V	-	66	A
I_{DM}**,***	Pulsed Source Current	T_C = 25 ℃, V_{GS} = 10 V	-	180	A
P_{tot}*	Total Power Dissipation	T_C = 25 ℃	-	147	W
T_{stg}	Storage Temperature		- 55	150	℃
T_J	Junction Temperature		-	150	℃
I_S*	Diode Forward Current	T_C = 25 ℃	-	66	A
$R_{\theta JA}$*	Thermal Resistance- Junction to Ambient		-	62.5	℃ / W
$R_{\theta JC}$*	Thermal Resistance- Junction to Case		-	0.85	

Electrical Characteristics (T_A = 25 °C Unless Otherwise Noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS} = 0 V, I_D = 250 μA	150	-	-	V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_{DS} = 250 μA	2	-	4	V
I_{DSS}	Zero Gate Voltage Source Current	V_{DS} = 120 V, V_{GS} = 0 V	-	-	1	μA
		T_J = 85 ℃	-	-	30	μA
I_{GSS}	Gate Leakage Current	V_{GS} = ± 20 V, V_{DS} = 0 V	-	-	± 100	nA
$R_{DS(ON)}$ [a]	Drain-Source On-State Resistance	V_{GS} = 10 V, I_D = 20 A	-	15	18	mΩ
	Drain-Source On-State Resistance	V_{GS} = 6 V, I_D = 10 A	-	16	20	mΩ
Diode Characteristics						
V_{SD} [a]	Diode Forward Voltage	I_{SD} = 20 A, V_{GS} = 0 V	-	-	1.3	V
t_{rr}	Reverse Recovery Time	I_{SD} = 20 A, dI_{SD}/dt = 100 A/μs	-	89	-	nS
Q_{rr}	Reverse Recovery Charge		-	315	-	nC
Dynamic Characteristics [b]						
C_{iss}	Input Capacitance	V_{GS} = 0 V, V_{DS} = 75 V Frequency = 1 MHz	-	2820	-	pF
C_{oss}	Output Capacitance		-	209	-	
C_{rss}	Reverse Transfer Capacitance		-	28	-	
t_d(on)	Turn-on Delay Time	V_{DS} = 75 V, V_{GEN} = 10 V, R_G = 4.5 Ω, R_L = 3.75 Ω, I_D = 20 A	-	15	-	nS
t_r	Turn-on Rise Time		-	55	-	
t_d(off)	Turn-off Delay Time		-	28	-	
t_f	Turn-off Fall Time		-	57	-	
Gate Charge Characteristics [b]						
Q_g	Total Gate Charge	V_{GS} = 10 V, V_{DS} = 75 V, I_{DS} = 20 A	-	43	-	nC
Q_{gs}	Gate-Source Charge		-	16	-	
Q_{gd}	Gate-Drain Charge		-	8.7	-	

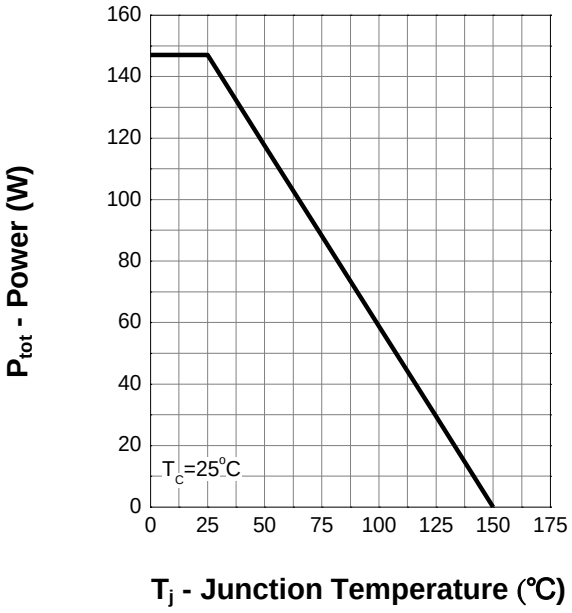
Notes：

a : Pulse test ; pulse width ≤ 300 μs, duty cycle ≤ 2 %

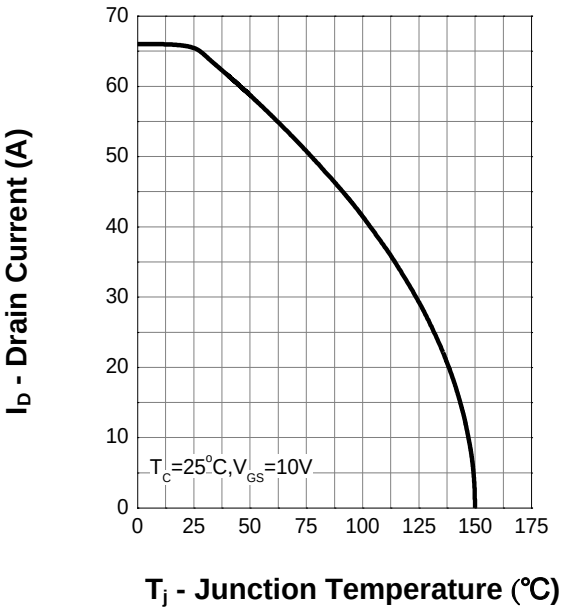
b : Guaranteed by design, not subject to production testing

Typical Characteristics

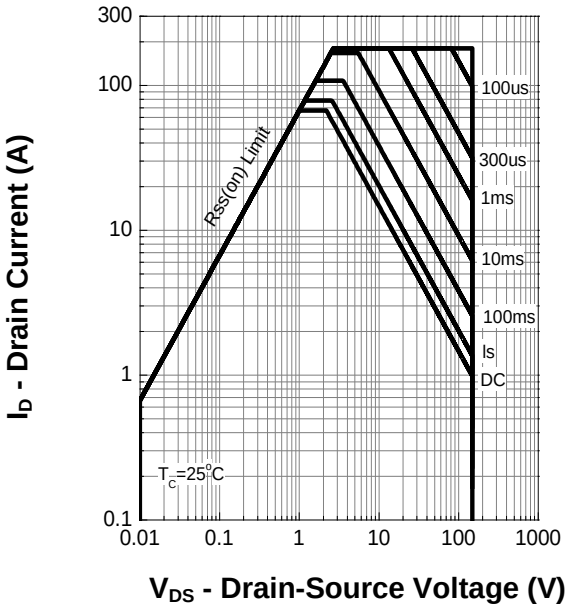
Power Capability



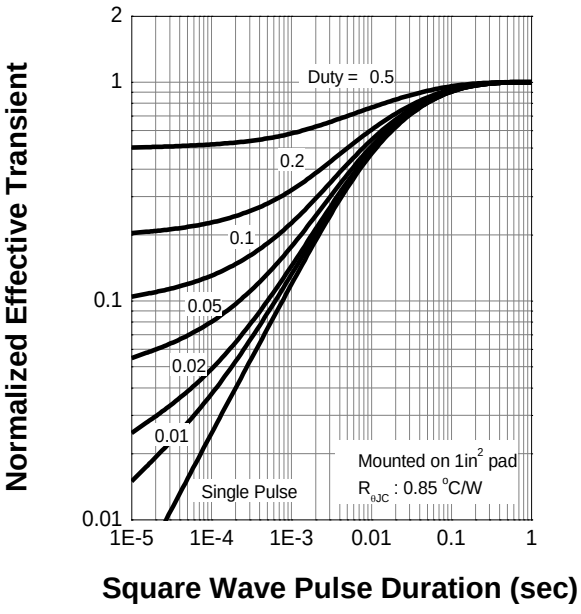
Current Capability



Safe Operation Area

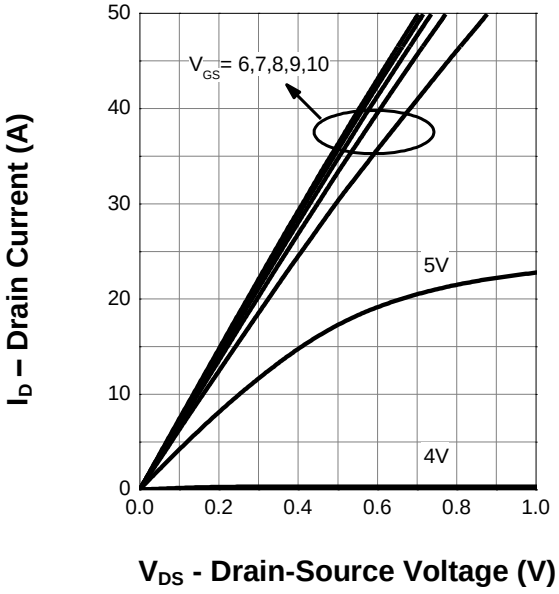


Thermal Transient Impedance

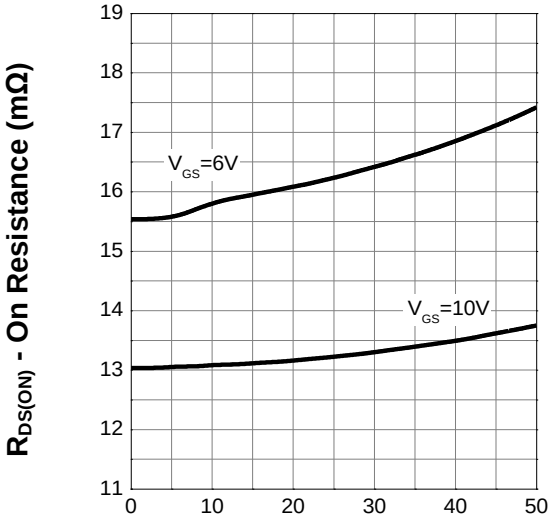


Typical Characteristics (cont.)

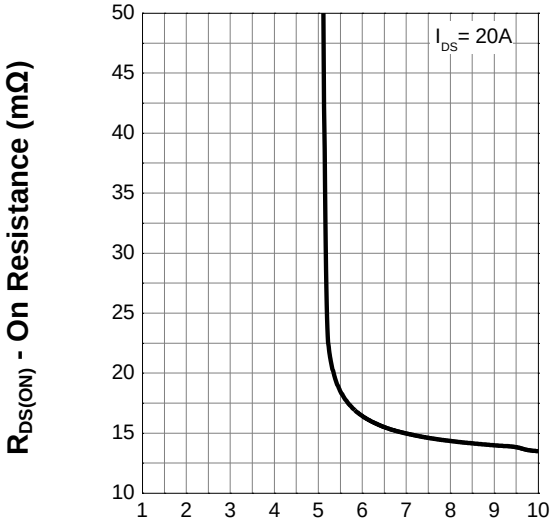
Output Characteristics



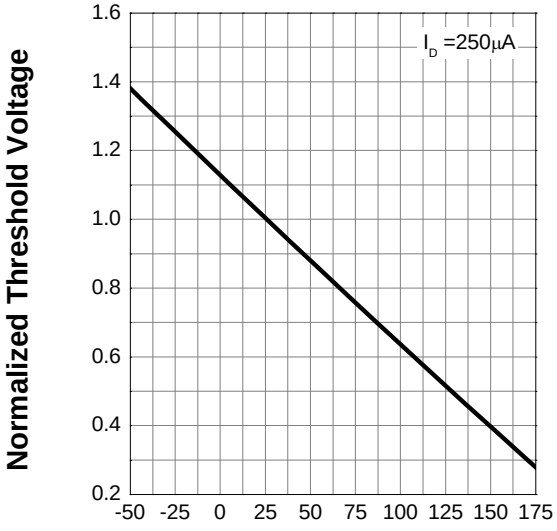
Drain-Source On Resistance



Transfer Characteristics

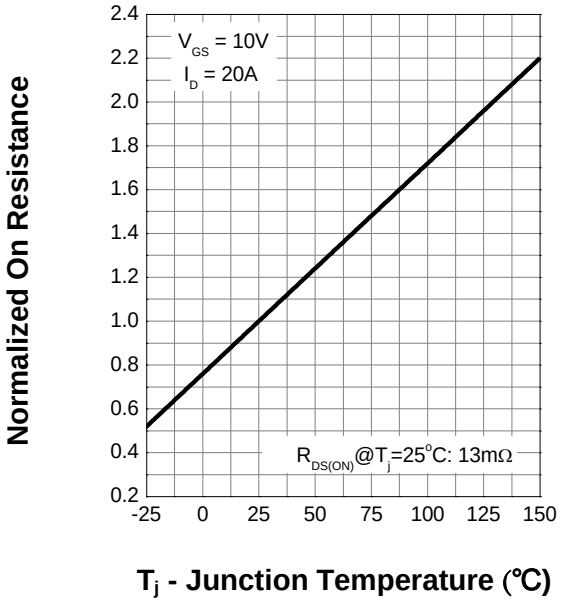


Gate Threshold Voltage

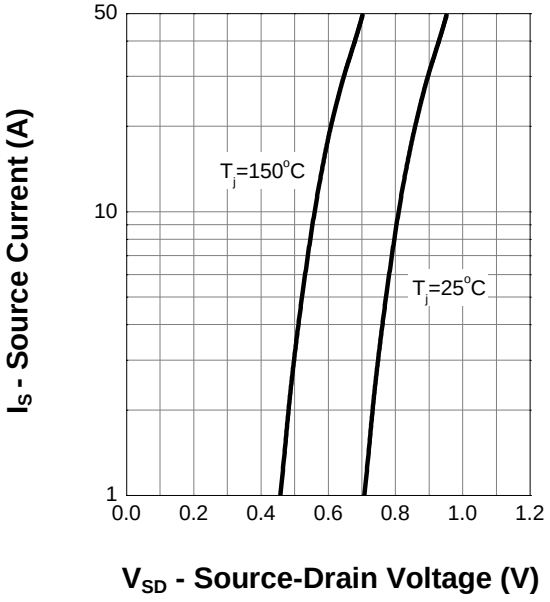


Typical Characteristics (cont.)

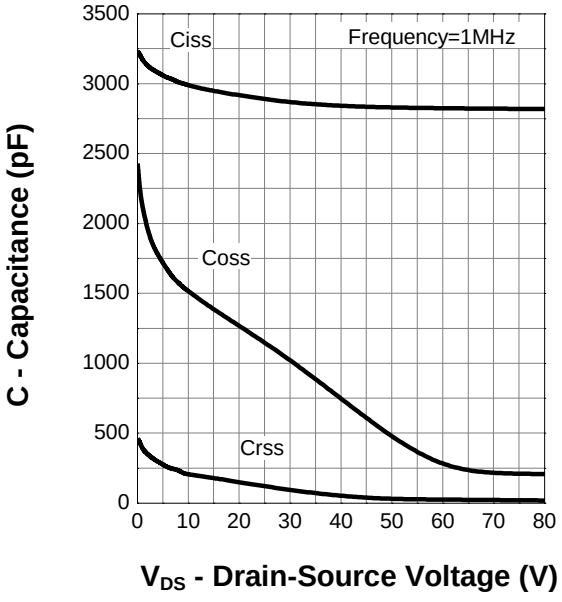
Drain-Source On Resistance



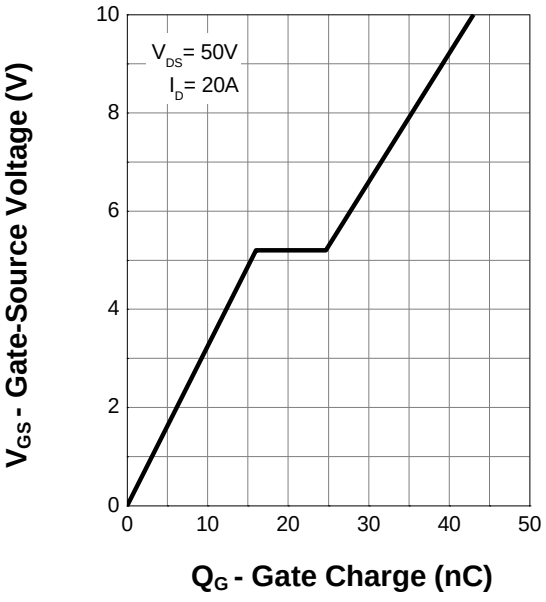
Body Diode Characteristics



Capacitance

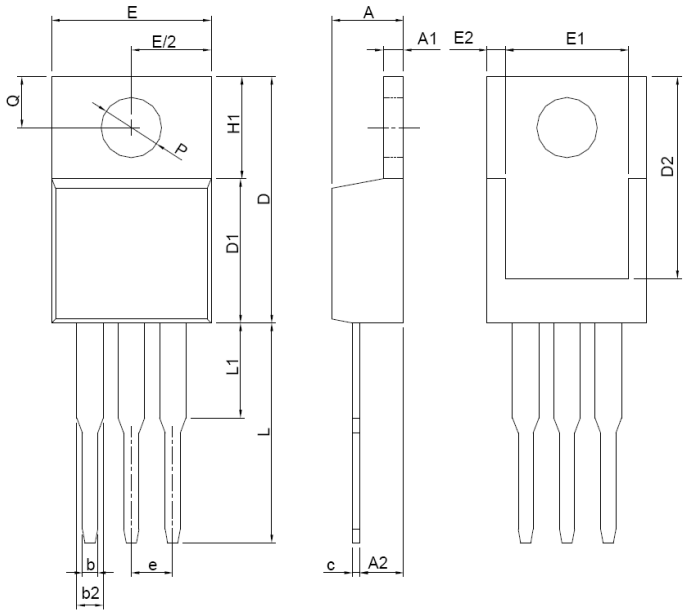


Gate Charge



Package Dimensions

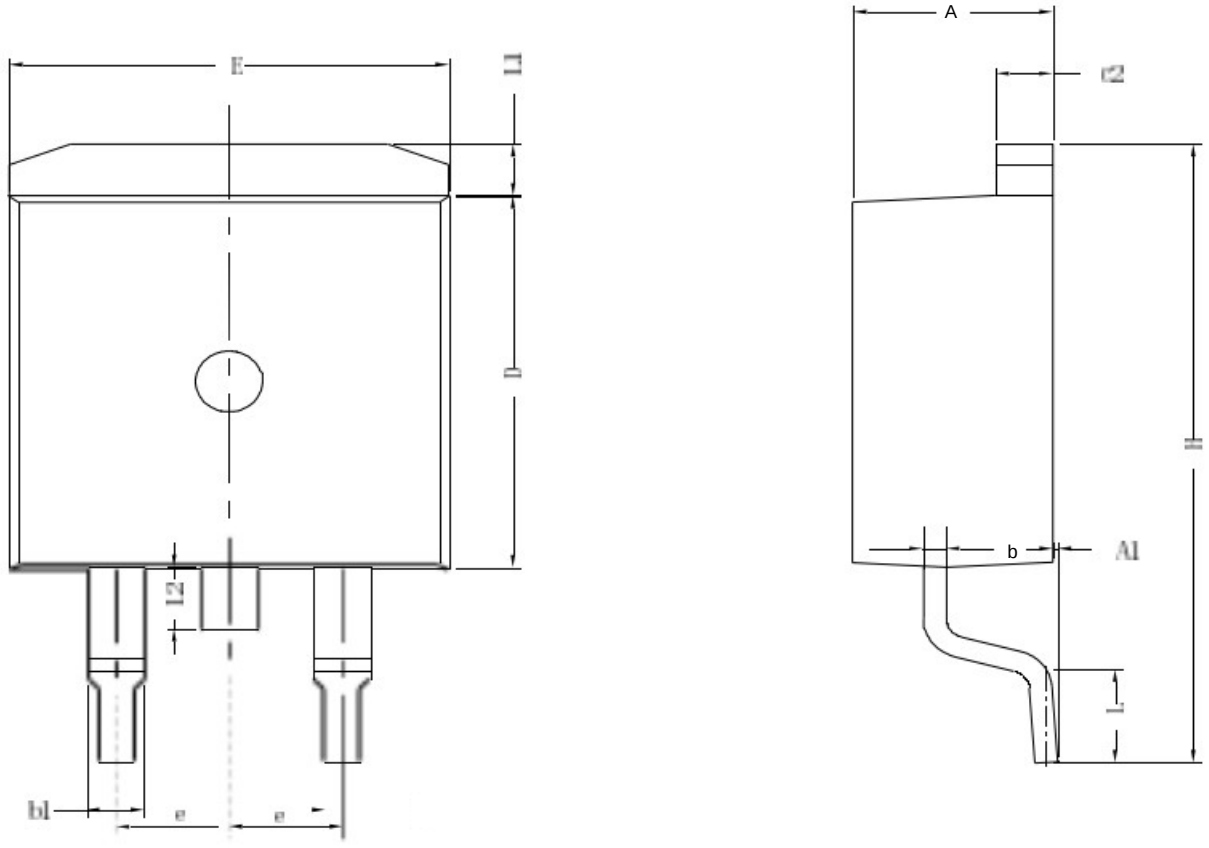
TO-220-3L



Symbol	Dimensions In Millimeters	
	MIN.	MAX.
A	3.56	4.83
A1	0.51	1.40
A2	2.03	2.92
b	0.38	1.02
b2	1.14	1.78
c	0.36	0.61
D	14.22	16.51
D1	8.38	9.02
D2	12.19	12.88
E	9.65	10.67
E1	6.86	8.89
E2	0.76BSC	
e	2.54BSC	
H1	5.84	6.86
L	12.70	14.73
L1	6.35BSC	
P	3.53	4.09
Q	2.54	3.43

Package Dimensions

TO-263-3L



Symbol	Dimensions In Millimeters	
	MIN.	MAX.
A	4.3	4.72
A1	0	1.0
b	0.71	0.91
b2	0.30	0.60
C	1.17	1.37
D	8.5	9.35
E	9.8	10.45
E1	6.86	8.89
e	2.54BSC	
H1	14.7	15.75
L	2	2.74
L1	1.12	1.42
L2		1.75