

Isc N-Channel MOSFET Transistor

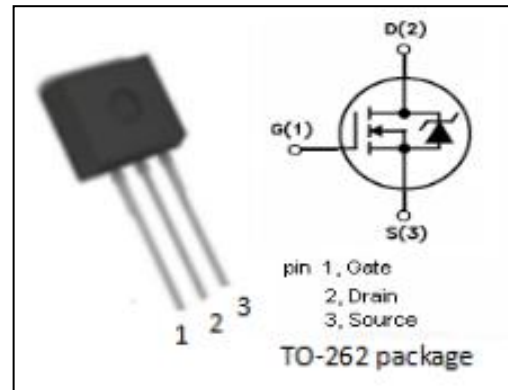
IRL3705NL

• FEATURES

- Low power loss
- High speed switching
- Low on-resistance
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

• APPLICATIONS

- Switching applications
- Motor control
- DC - DC converters



• ABSOLUTE MAXIMUM RATINGS($T_a=25^{\circ}\text{C}$)

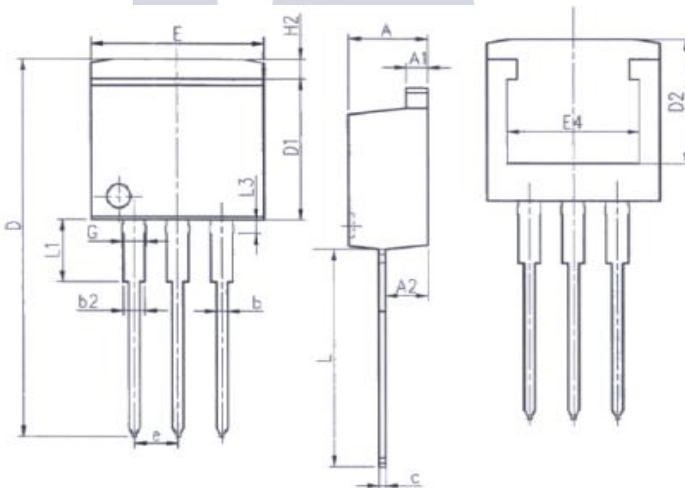
SYMBOL	PARAMETER	VALUE	UNIT
V_{DSS}	Drain-Source Voltage	55	V
V_{GSS}	Gate-Source Voltage	± 16	V
I_D	Drain Current-Continuous@ $T_c=25^{\circ}\text{C}$ $T_c=100^{\circ}\text{C}$	89 63	A
I_{DM}	Drain Current-Single Pulsed	310	A
P_D	Total Dissipation	170	W
T_j	Operating Junction Temperature	-55~175	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~175	$^{\circ}\text{C}$

• THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th(ch-c)}$	Channel-to-case thermal resistance	0.9	$^{\circ}\text{C}/\text{W}$
$R_{th(ch-a)}$	Channel-to-ambient thermal resistance	40	$^{\circ}\text{C}/\text{W}$

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ELECTRICAL CHARACTERISTICS
 $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V; I_D=0.25mA$	55			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=\pm 16V; I_D=0.25mA$	1		2	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10V; I_D=46A$ $V_{GS}=10V; I_D=46A$ $V_{GS}=10V; I_D=39A$			10 12 18	$m\Omega$
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 16V; V_{DS}=0V$			± 0.1	μA
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=55V; V_{GS}=0V$			25 250	μA
V_{SDF}	Diode forward voltage	$I_{SD}=46A, V_{GS}=0V$			1.3	V

DIMENSIONAL DRAWING


Unit: mm		
Symbol	Min.	Max.
A	4.37	4.77
A1	1.22	1.42
A2	2.47	2.87
b	0.70	0.97
b2	1.17	1.42
c	0.28	0.53
D	23.20	24.02
D1	8.38	8.90
D2	6.00	-

Unit: mm		
Symbol	Min.	Max.
E	9.90	10.39
E4	7.30	-
e	2.54BSC	
G	1.25	1.50
H2	-	1.31
L	13.34	14.10
L1	3.30	4.06
L3	0.95	1.15

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