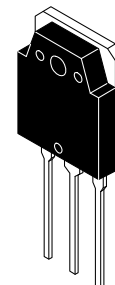




# NDTL03N150C

## N-Channel Power MOSFET 1500V, 2.5A, 10.5Ω, TO-3P-3L

ON Semiconductor®

<http://onsemi.com>

TO-3P-3L

### Features

- On-resistance  $R_{DS(on)}=8\Omega$ (typ.)
- Input Capacitance  $C_{iss}=650pF$ (typ.)
- 10V drive

### Specifications

#### Absolute Maximum Ratings at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Drain to Source Voltage	$V_{DSS}$		1500	V
Gate to Source Voltage	$V_{GSS}$		$\pm 30$	V
Drain Current (DC)	$I_D$		2.5	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	5	A
Allowable Power Dissipation	$P_D$		2.5	W
		$T_c = 25^\circ C$	140	W
Channel Temperature	$T_{ch}$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$
Avalanche Energy (Single Pulse) * <sup>1</sup>	EAS		34	mJ
Avalanche Current * <sup>2</sup>	$I_{AV}$		2.5	A

\*<sup>1</sup>  $V_{DD}=50V$ ,  $L=10mH$ ,  $I_{AV}=2.5A$  (Fig.1)\*<sup>2</sup>  $L \leq 10mH$ , Single Pulse

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

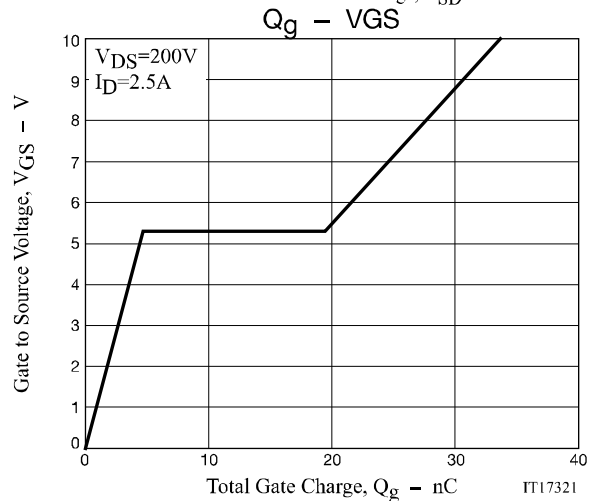
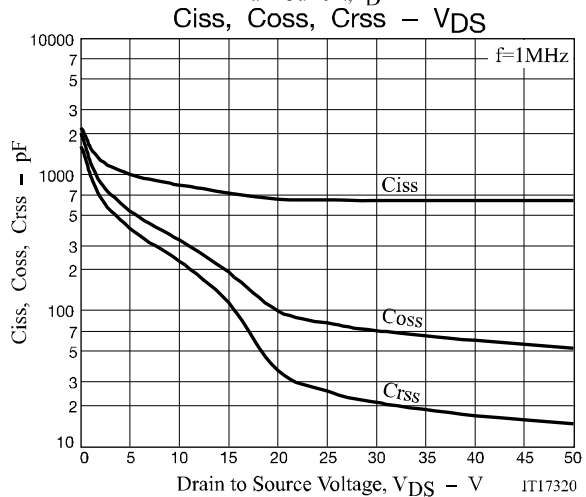
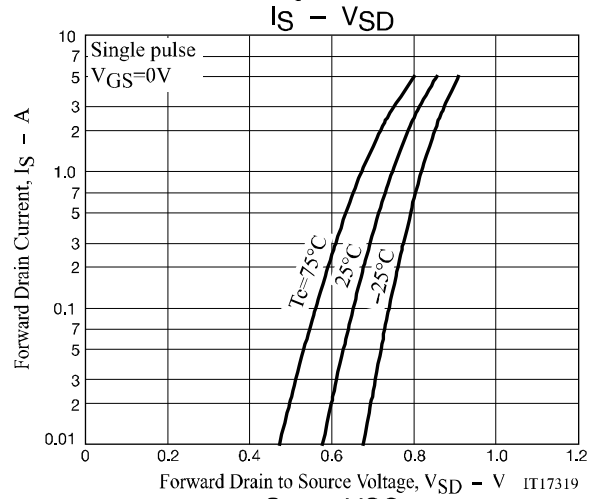
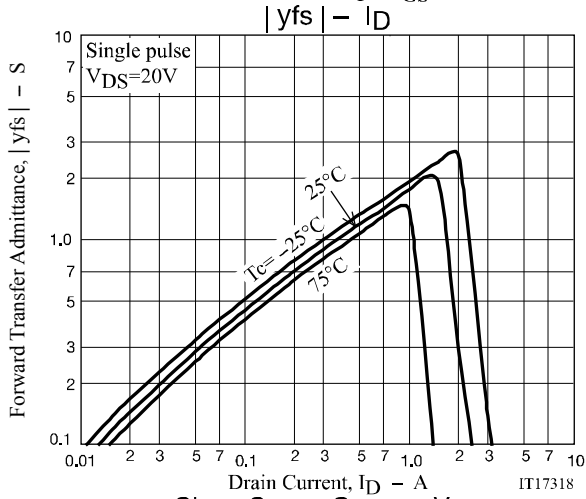
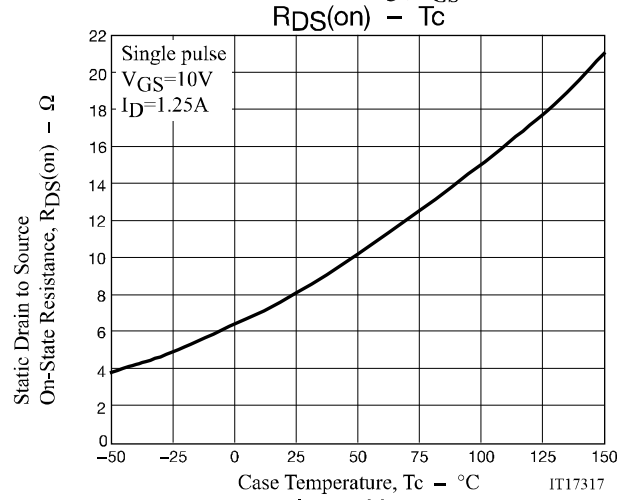
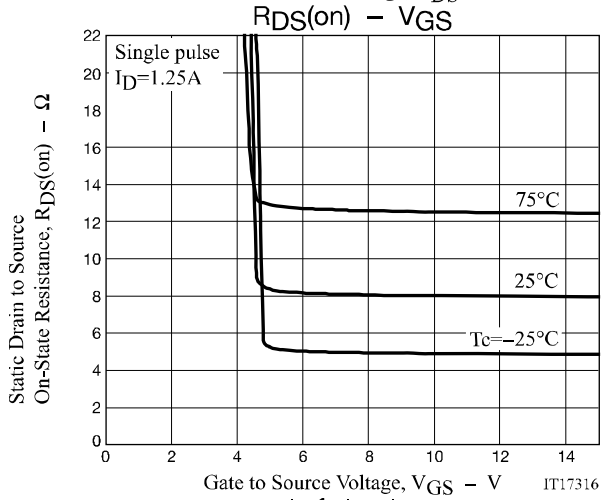
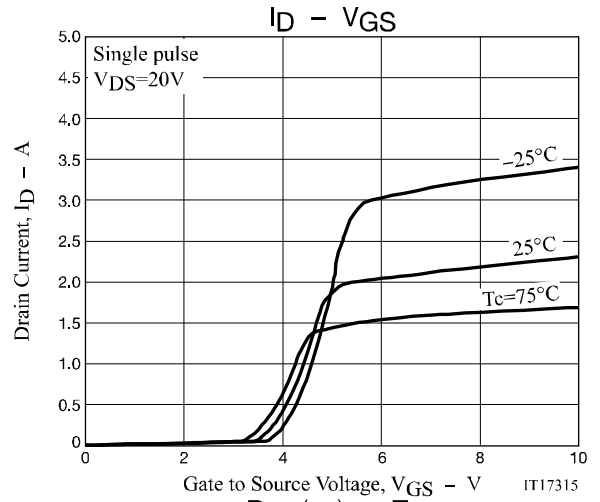
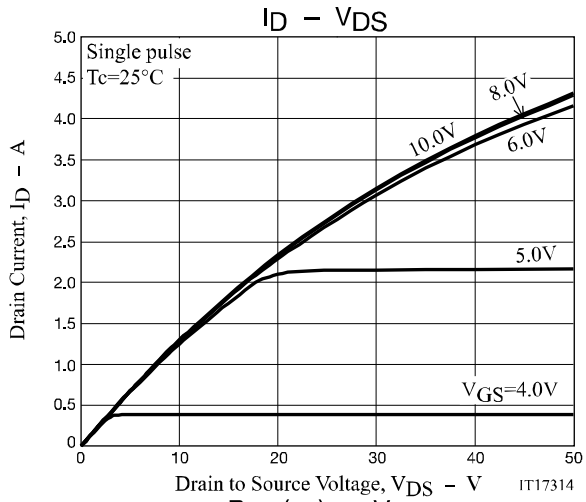
#### Electrical Characteristics at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings			Unit	
			min	typ	max		
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=10mA$ , $V_{GS}=0V$	1500			V	
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=1200V$ , $V_{GS}=0V$			1	mA	
Gate to Source Leakage Current	$I_{GSS}$	$V_{GS}=30V$ , $V_{DS}=0V$			$\pm 100$	nA	
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V$ , $I_D=1mA$	2		4	V	
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=20V$ , $I_D=1.25A$		1.9		S	
Static Drain to Source On-State Resistance	$R_{DS(on)}$	$I_D=1.25A$ , $V_{GS}=10V$		8	10.5	$\Omega$	
Input Capacitance	$C_{iss}$	$V_{DS}=30V$ , $f=1MHz$		650		pF	
Output Capacitance	$C_{oss}$				70		pF
Reverse Transfer Capacitance	$C_{rss}$				20		pF
Turn-ON Delay Time	$t_{d(on)}$	See Fig.2		15		ns	
Rise Time	$t_r$			24		ns	
Turn-OFF Delay Time	$t_{d(off)}$			140		ns	
Fall Time	$t_f$			47		ns	
Total Gate Charge	$Q_g$	$V_{DS}=200V$ , $V_{GS}=10V$ , $I_D=2.5A$		34		nC	
Gate to Source Charge	$Q_{gs}$			4.7		nC	
Gate to Drain "Miller" Charge	$Q_{gd}$			15		nC	
Diode Forward Voltage	$V_{SD}$	$I_S=2.5A$ , $V_{GS}=0V$		0.8	1.5	V	
Reverse Recovery Time	$t_{rr}$	See Fig.3		350		ns	
Reverse Recovery Charge	$Q_{rr}$	$I_S=2.5A$ , $V_{GS}=0V$ , $di/dt=100A/\mu s$		2220		nC	

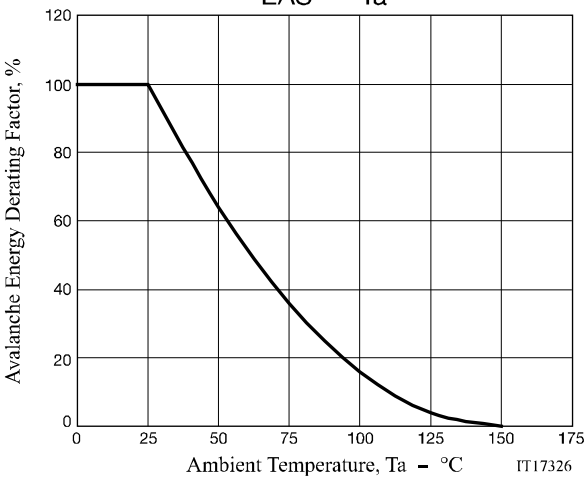
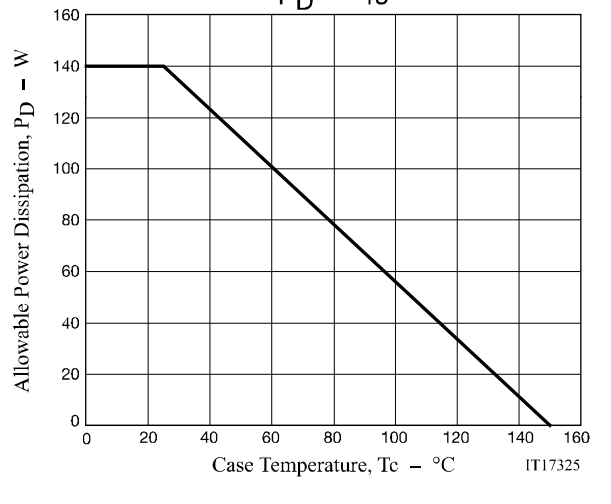
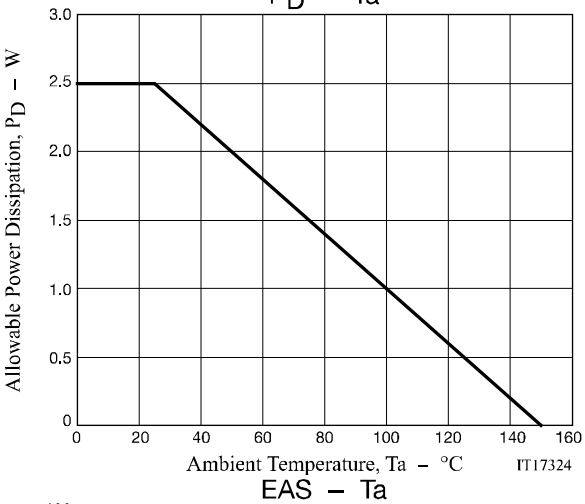
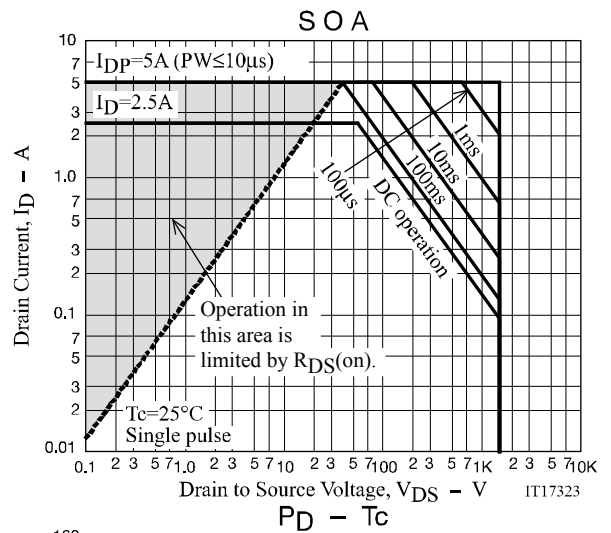
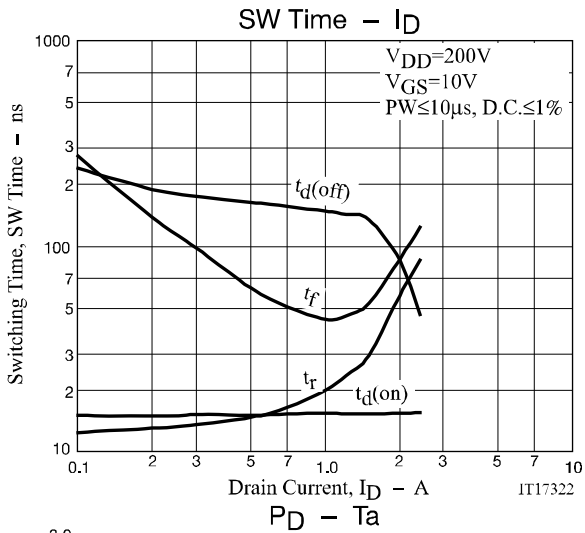
### ORDERING INFORMATION

See detailed ordering and shipping information on page 4 of this data sheet.

# NDTL03N150C



# NDTL03N150C



# NDTL03N150C

## Package Dimensions

NDTL03N150CG

### TO-3P-3L

CASE 340AF

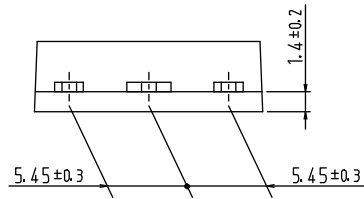
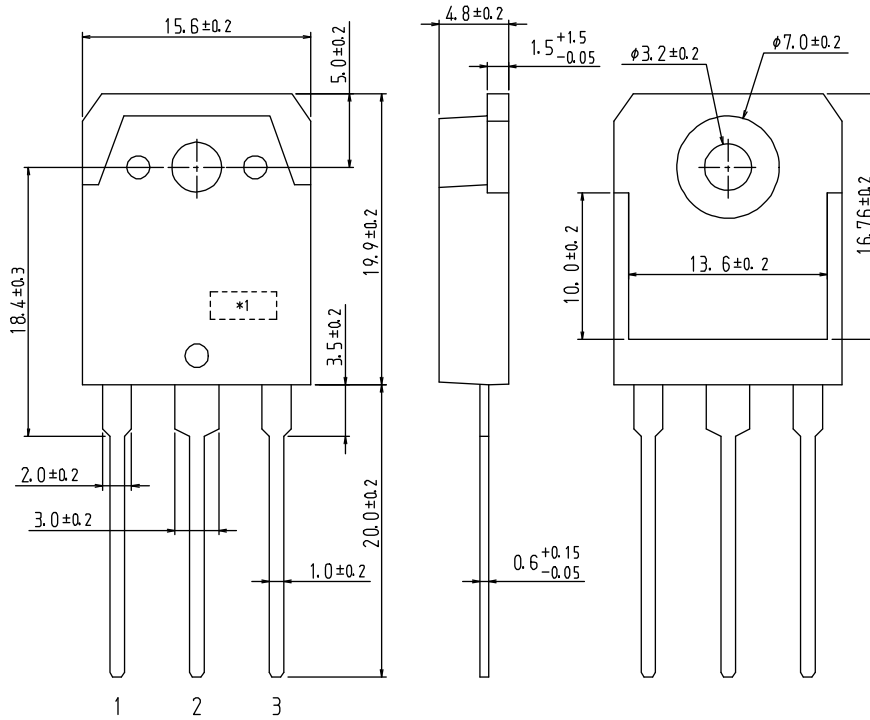
ISSUE O

Unit : mm

1: Gate

2: Drain

3: Source



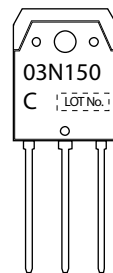
These dimension do not include mold protrusion

\*1: Lot indication

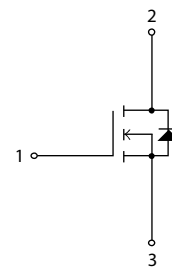
## Ordering & Package Information

Device	Package	Shipping	note
NDTL03N150CG	TO-3P-3L, SC-65, SOT-199, TO-247	30 pcs. / tube	Pb-Free

## Marking

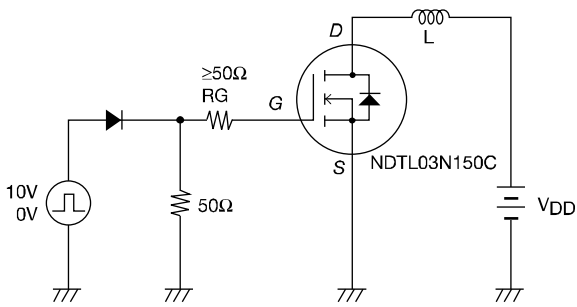


## Electrical Connection

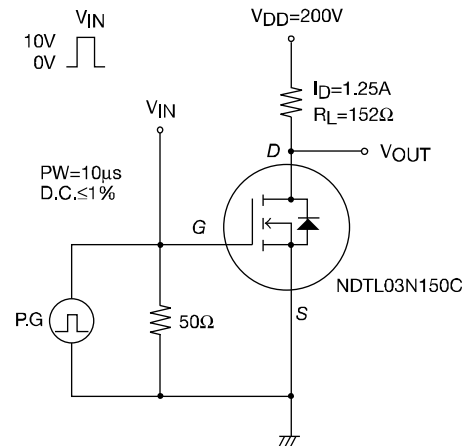


# NDTL03N150C

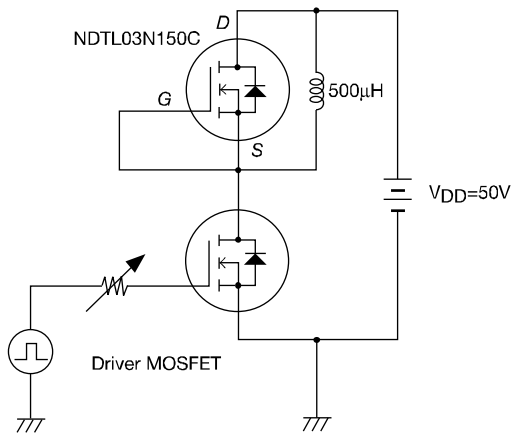
**Fig.1 Unclamped Inductive Switching Test Circuit**



**Fig.2 Switching Time Test Circuit**



**Fig.3 Reverse Recovery Time Test Circuit**



Note on usage : Since the NDTL03N150C is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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