



NDTL03N150C

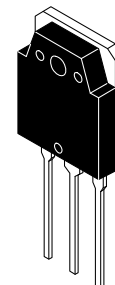
N-Channel Power MOSFET 1500V, 2.5A, 10.5Ω, TO-3P-3L

ON Semiconductor®

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Features

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



TO-3P-3L

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}		± 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) * ¹	EAS		34	mJ
Avalanche Current * ²	I_{AV}		2.5	A

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

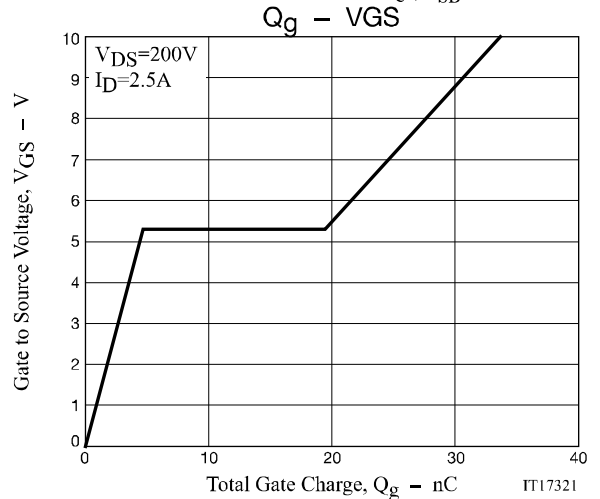
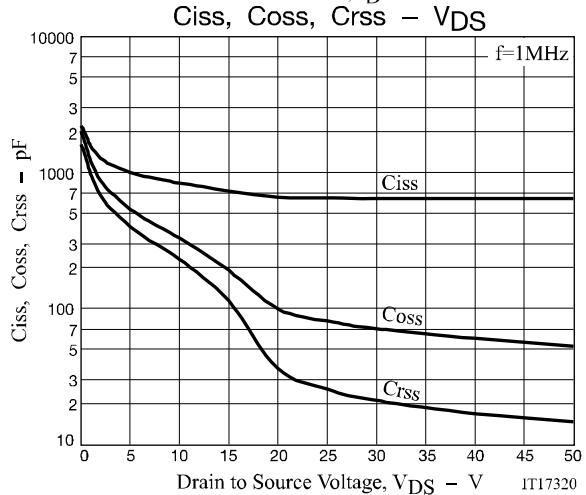
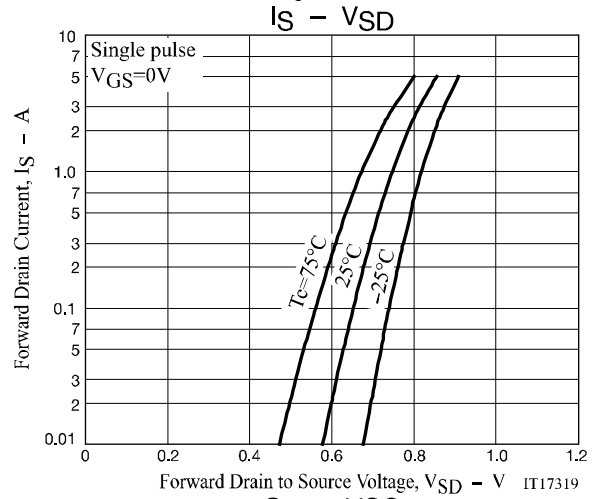
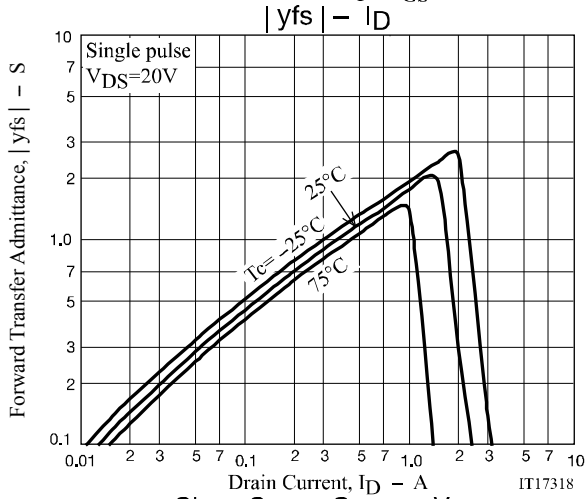
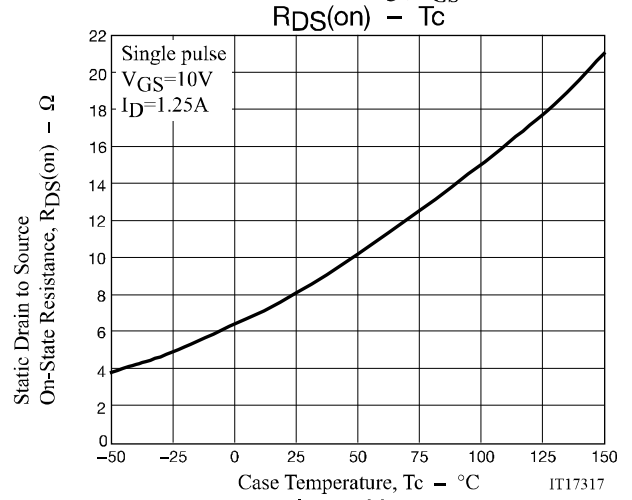
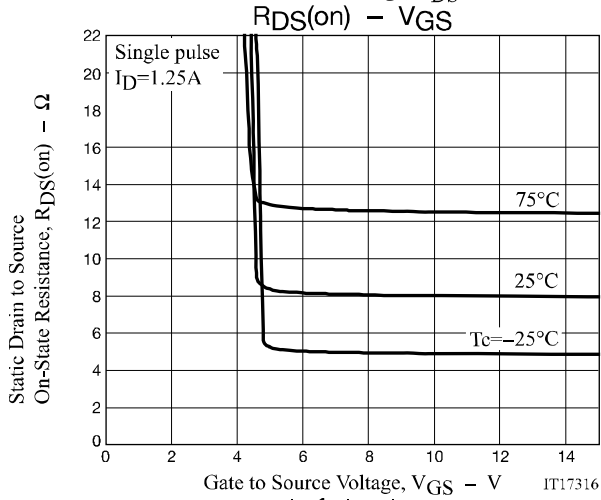
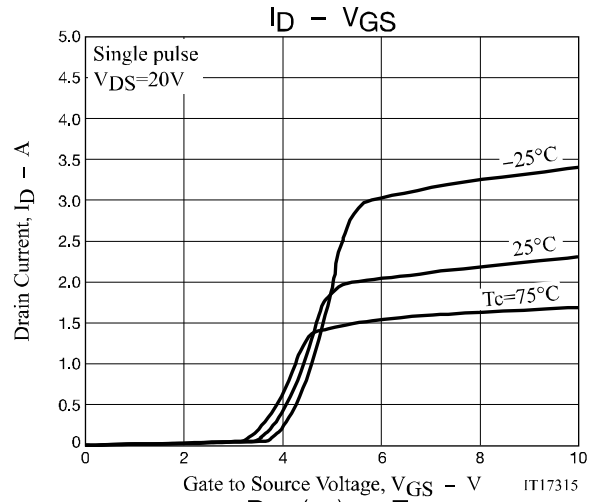
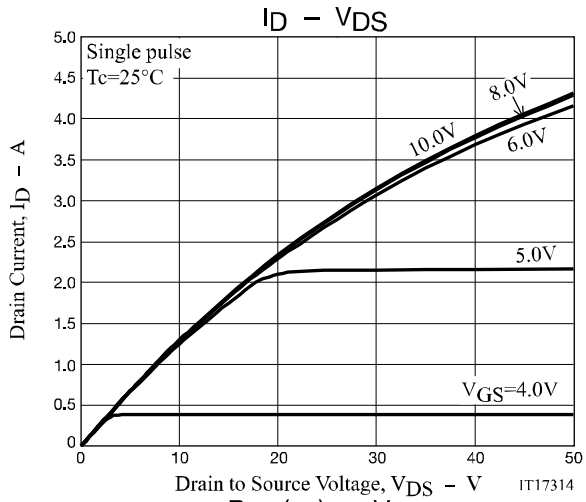
Electrical Characteristics at $T_a = 25^\circ C$

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}	$V_{GS}=30V$, $V_{DS}=0V$			± 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	Ω	
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	

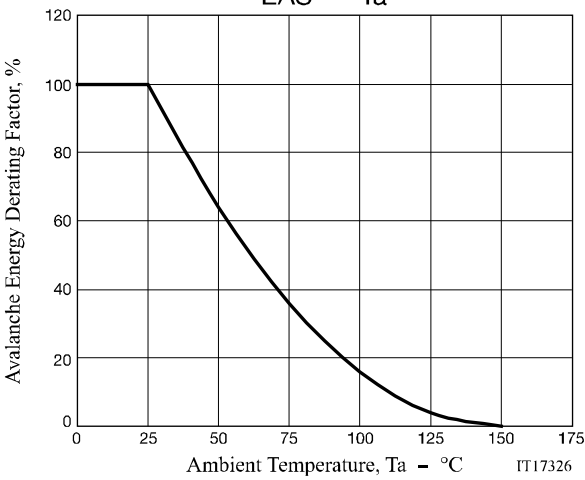
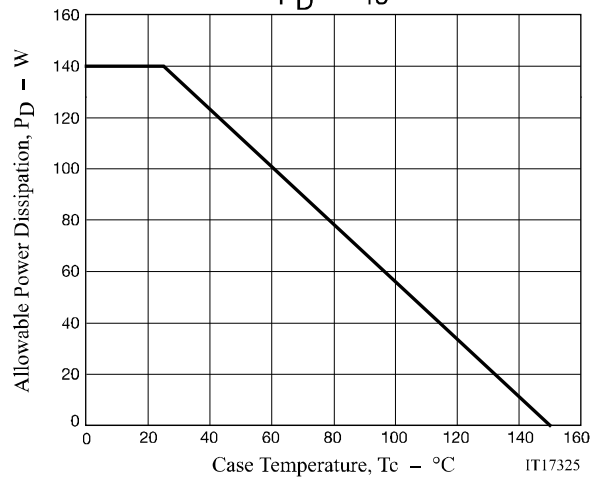
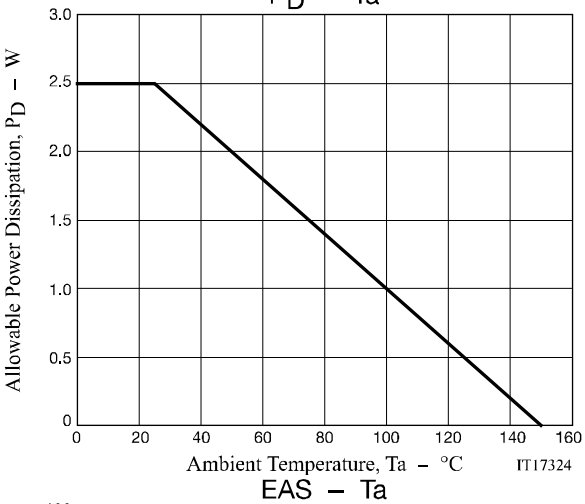
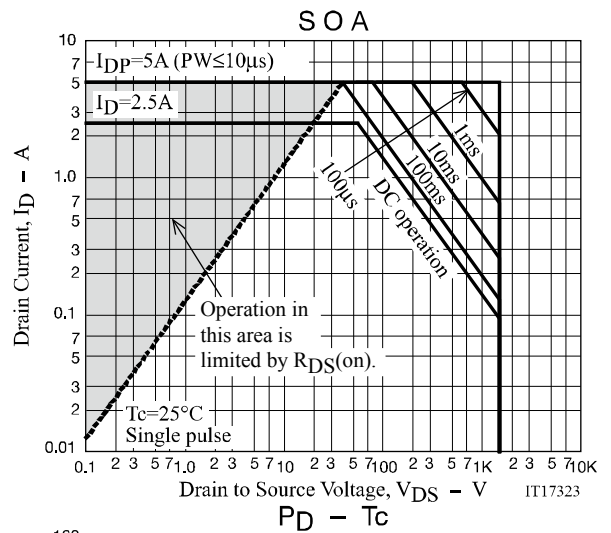
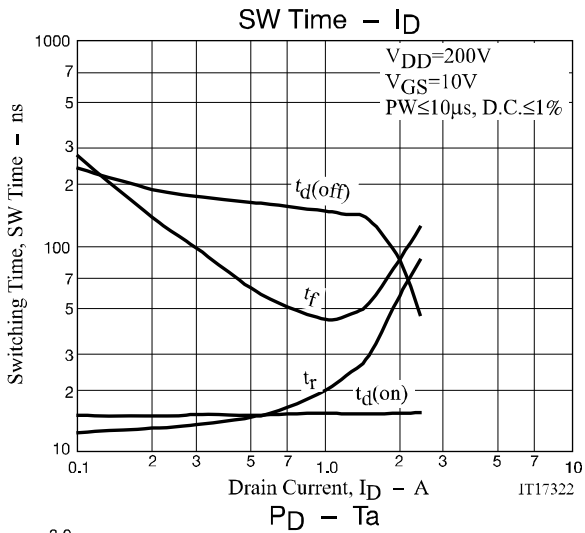
ORDERING INFORMATION

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

NDTL03N150C



NDTL03N150C



NDTL03N150C

Package Dimensions

NDTL03N150CG

TO-3P-3L

CASE 340AF

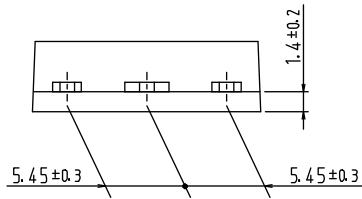
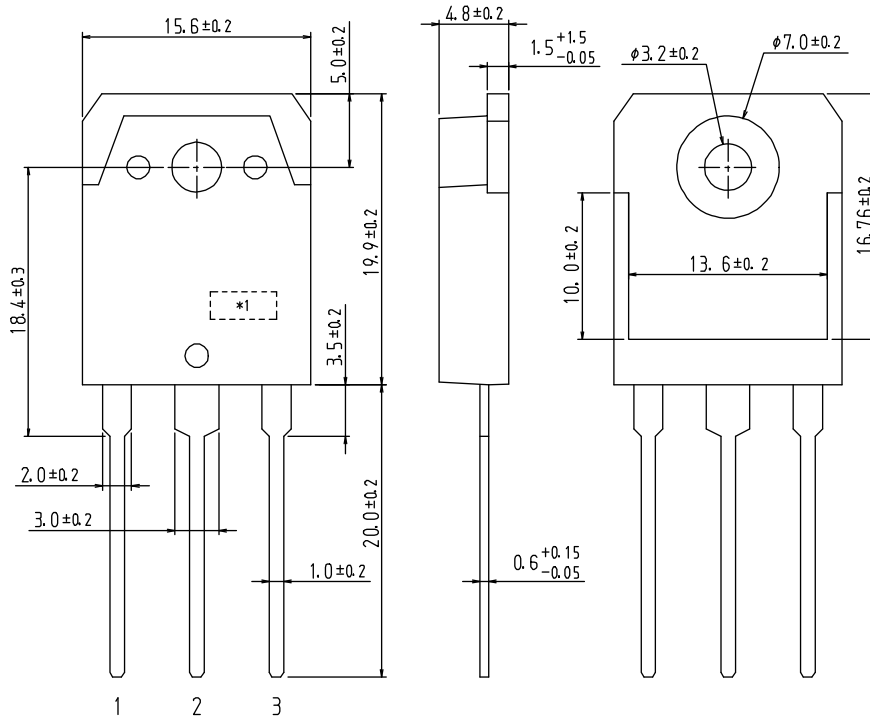
ISSUE O

Unit : mm

1: Gate

2: Drain

3: Source



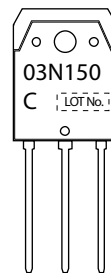
These dimension do not include mold protrusion

*1: Lot indication

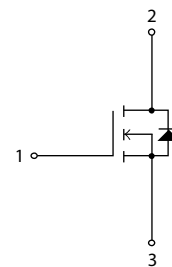
Ordering & Package Information

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

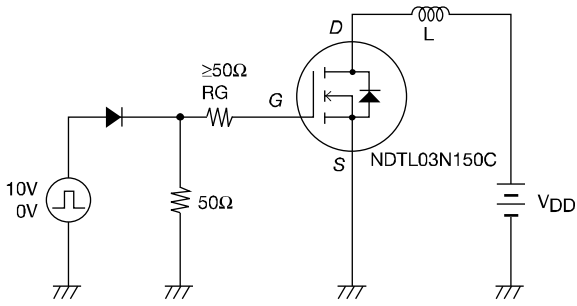


Fig.2 Switching Time Test Circuit

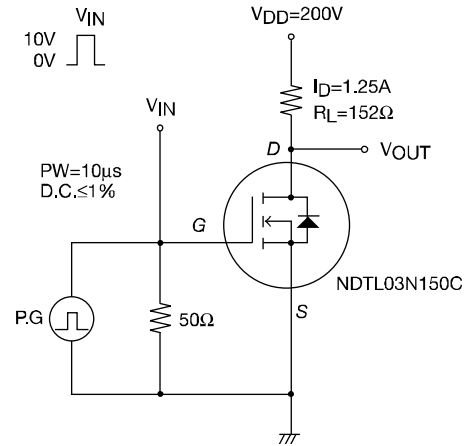
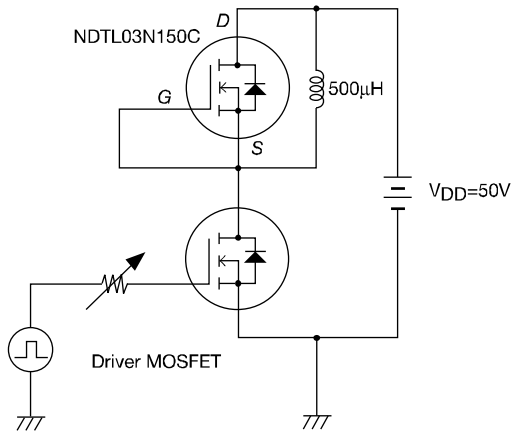


Fig.3 Reverse Recovery Time Test Circuit



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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