

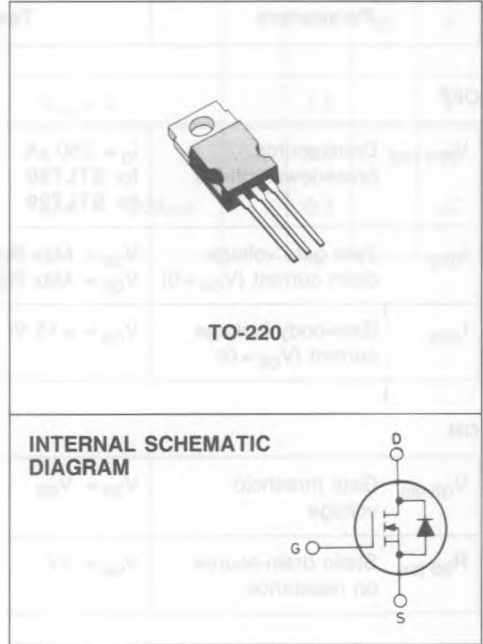
## N - CHANNEL ENHANCEMENT MODE LOW THRESHOLD POWER MOS TRANSISTORS

ADVANCE DATA

TYPE	V <sub>DSS</sub>	R <sub>DS(on)</sub>	I <sub>D</sub>
STLT30	60 V	0.08 Ω	25 A
STLT29	50 V	0.08 Ω	25 A

- LOGICAL LEVEL (+ 5V) CMOS/TTL COMPATIBLE INPUT
- HIGH INPUT IMPEDANCE
- ULTRA FAST SWITCHING

N - channel enhancement mode POWER MOS field effect transistors. The low input voltage - logic level - and easy drive make these devices ideal for automotive and industrial applications. Typical uses are in relay and actuator driving in the automotive environment.



### ABSOLUTE MAXIMUM RATINGS

	STLT30	STLT29	
V <sub>DS</sub>	60	50	V
V <sub>DGR</sub>	60	50	V
V <sub>GS</sub>		± 15	V
I <sub>D</sub>	25		A
I <sub>D</sub>	15.7		A
I <sub>DM</sub>	80		A
P <sub>tot</sub>	100		W
	0.8		W/°C
T <sub>stg</sub>	-65 to 150		°C
T <sub>j</sub>	150		°C

## THERMAL DATA

$R_{thj - case}$	Thermal resistance junction-case	max	1.25	°C/W
$R_{thj - amb}$	Thermal resistance junction-ambient		75	°C/W

ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}C$  unless otherwise specified)

Parameters	Test Conditions	Min.	Typ.	Max.	Unit
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## OFF

$V_{(BR) DSS}$	Drain-source breakdown voltage	$I_D = 250 \mu A$ for STLT30 for STLT29	$V_{GS} = 0$	60 50		V V
$I_{DSS}$	Zero gate voltage drain current ( $V_{GS} = 0$ )	$V_{DS} = \text{Max Rating}$ $V_{DS} = \text{Max Rating} \times 0.8$	$T_c = 125^{\circ}C$		250 1000	$\mu A$ $\mu A$
$I_{GSS}$	Gate-body leakage current ( $V_{DS} = 0$ )	$V_{GS} = \pm 15 V$			$\pm 100$	nA

## ON

$V_{GS(th)}$	Gate threshold voltage	$V_{DS} = V_{GS}$	$I_D = 250 \mu A$	1		2.5	V
$R_{DS(on)}$	Static drain-source on resistance	$V_{GS} = 5V$	$I_D = 12.5 A$			0.08	$\Omega$

## DYNAMIC

$g_{fs}$	Forward transconductance	$V_{DS} = 15 V$	$I_D = 12.5 A$	9			mho		
$C_{iss}$	Input capacitance	$V_{DS} = 25 V$ $V_{GS} = 0$	$f = 1 \text{ MHz}$		930	1200	pF		
$C_{oss}$	Output capacitance							600	pF
$C_{rss}$	Reverse transfer capacitance							130	pF

## SWITCHING

$t_{d(on)}$	Turn-on time	$V_{DD} = 25 V$ $R_{GS} = 50 \Omega$	$I_D = 12.5 A$ $V_{GS} = 5 V$		25	210	ns
$t_r$	Rise time						
$t_{d(off)}$	Turn-off delay time				19		nC
$t_f$	Fall time						
$Q_g$	Total Gate Charge	$V_{DS} = 25 V$ $V_{GS} = 5 V$	$I_D = 25 A$				

## ELECTRICAL CHARACTERISTICS (Continued)

Parameters	Test Conditions	Min.	Typ.	Max.	Unit
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## SOURCE DRAIN DIODE

$I_{SD}$	Source-drain current			25	A
$I_{SDM}$	Source-drain current (pulsed)			80	A
$V_{SD}$	Forward on voltage	$I_{SD} = 25 \text{ A}$	$V_{GS} = 0$	1.5	V
$t_{rr}$	Reverse recovery time			300	ns
$Q_{rr}$	Reverse recovery charge	$I_{SD} = 25 \text{ A}$	$di/dt = 100 \text{ A}/\mu\text{s}$	0.3	$\mu\text{C}$