

SUD35N05-26L N-Channel

55 V (D-S) 175 °C MOSFET

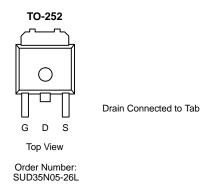
PRODUCT SUMMARY			
V _{DS} (V)	$r_{DS(on)}(\Omega)$	I _D (A) ^a	
55	0.020 @ V _{GS} = 10 V	35	
	0.026 @ V _{GS} = 4.5 V	30	

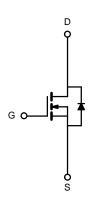
FEATURES

- TrenchFET® Power MOSFETS
- 175°C Rated Maximum Junction Temperature
- Low Input Capacitance

APPLICATIONS

- Automotive Fuel Injection Systems
- Automotive Wipers
- Automotive Door Modules





N-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)				
Parameter	Symbol	Limit	Unit	
Drain-Source Voltage		V _{DS}	55	V
Gate-Source Voltage		V _{GS}	±20	V
0 11	T _C = 25°C		35	
Continuous Drain Current (T _J = 175°C) ^b	T _C = 100°C	I _D	25	
Pulsed Drain Current		I _{DM}	80	A
Continuous Source Current (Diode Conduction) ^a		I _S	35	
	T _C = 25°C	_	50 ^c	
Maximum Power Dissipation	T _A = 25°C	P _D	7.5 ^b	W
Operating Junction and Storage Temperature Range		T _J , T _{stg}	-55 to 175	°C

THERMAL RESISTANCE RATINGS						
Parameter		Symbol	Typical	Maximum	Unit	
	t ≤ 10 sec	R _{thJA}	17	20		
Junction-to-Ambient ^b	Steady State		R _{thJA}	50	60	
Junction-to-Case		R _{thJC}	2.5	3.0	°C/W	
Junction-to-Lead		R _{thJL}	5.0	6.0		

Notes

- Package Limited. Surface Mounted on 1" x1" FR4 Board, t ≤ 10 sec.
- See SOA curve for voltage derating.

1/5 www.freescale.net.cn

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Parameter	Symbol	Test Condition	Min	Typ ^a	Max	Unit	
Static	1		1	•	I.	1	
Drain-Source Breakdown Voltage	V _{(BR)DSS}	$V_{GS} = 0 \text{ V}, I_D = 250 \mu\text{A}$	55			V	
Gate Threshold Voltage	V _{GS(th)}	$V_{DS} = V_{GS}, I_D = 250 \mu A$	1			V	
Gate-Body Leakage	I _{GSS}	V_{DS} = 0 V, V_{GS} = ± 20 V			±100	nA	
	I _{DSS}	V _{DS} = 44 V, V _{GS} = 0 V			1	1 50 μA	
Zero Gate Voltage Drain Current		$V_{DS} = 44 \text{ V}, V_{GS} = 0 \text{ V}, T_{J} = 125 ^{\circ}\text{C}$			50		
On-State Drain Current ^b	I _{D(on)}	$V_{DS} = 5 \text{ V}, V_{GS} = 5 \text{ V}$	35			Α	
		V _{GS} = 10 V, I _D = 20 A		0.0165	0.020		
Drain-Source On-State Resistance ^b	r _{DS(on)}	$V_{GS} = 10 \text{ V}, I_D = 20 \text{ A}, T_J = 125^{\circ}\text{C}$		0.03			
		$V_{GS} = 4.5 \text{ V}, I_D = 15 \text{ A}$		0.0215	0.026		
Forward Transconductance ^b	9 _{fs}	$V_{DS} = 15 \text{ V}, I_{D} = 20 \text{ A}$		25		S	
Dynamic ^a	1		- 1	•	ľ	1	
Input Capacitance	C _{iss}			885		pF	
Output Capacitance	C _{oss}	$V_{GS} = 0 \text{ V}, V_{DS} = 25 \text{ V}, F = 1 \text{ MHz}$		185			
Reverse Transfer Capacitance	C _{rss}			80			
Total Gate Charge ^c	Qg			10.5	13	nC	
Gate-Source Charge ^c	Q _{gs}	$V_{DS} = 25 \text{ V}, \ V_{GS} = 5 \text{ V}, \ I_{D} = 35 \text{ A}$		4			
Gate-Drain Charge ^c	Q _{gd}			4.8			
Turn-On Delay Time ^c	t _{d(on)}			5	8	ns	
Rise Time ^c	t _r	$V_{DD} = 25 \text{ V}, R_L = 0.3 \Omega$		18	30		
Turn-Off Delay Time ^c	t _{d(off)}	$I_D \cong 35 \text{ A}, V_{GEN} = 10 \text{ V}, R_G = 2.5 \Omega$		20	30		
Fall Time ^c	t _f			100	150		
Source-Drain Diode Ratings an	d Characteristic	c (T _C = 25°C)					
Continuous Current	Is				35		
Pulsed Current	I _{SM}				80	Α	
Diode Forward Voltage ^b	V _{SD}	$I_F = 80 \text{ A}, V_{GS} = 0 \text{ V}$			1.5	V	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 35 A, di/dt = 100 A/μs		25	40	ns	

- a. Guaranteed by design, not subject to production testing. b. Pulse test; pulse width $\leq 300~\mu s$, duty cycle $\leq 2\%$. c. Independent of operating temperature.

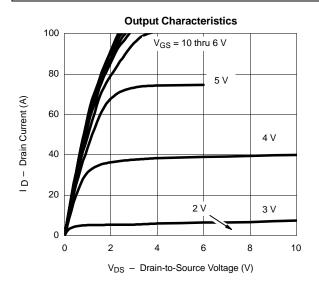
2/5 www.freescale.net.cn

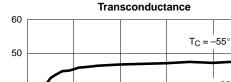


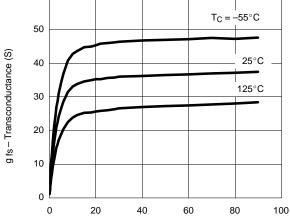
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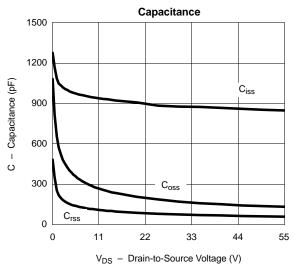
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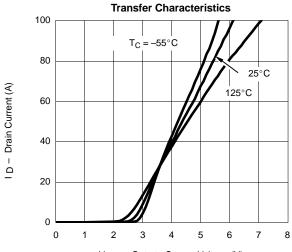




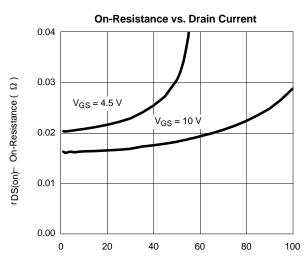


I_D - Drain Current (A)

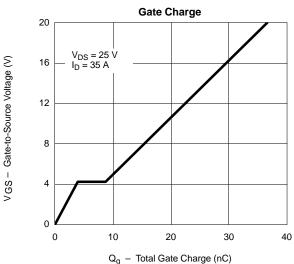




V_{GS} - Gate-to-Source Voltage (V)



I_D - Drain Current (A)

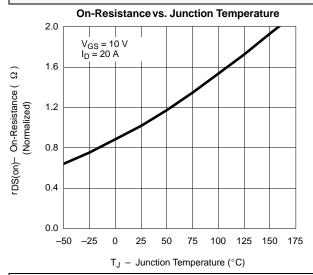


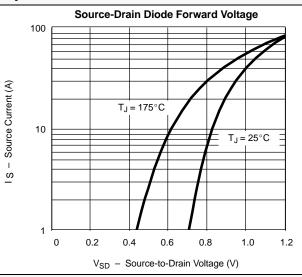
3/5 www.freescale.net.cn

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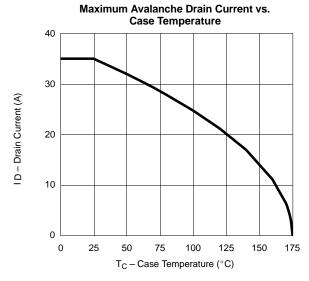
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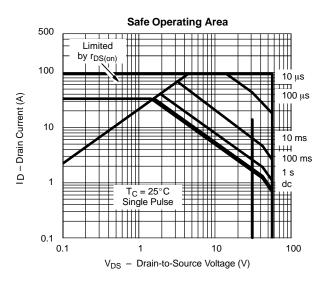
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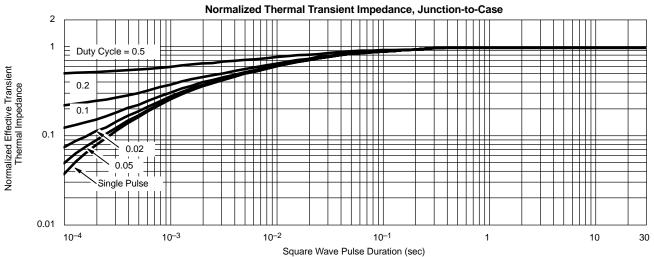




THERMAL RATINGS







4 / 5 www.freescale.net.cn



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