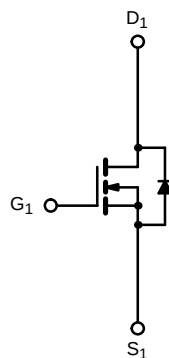
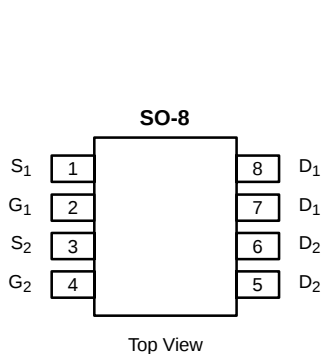




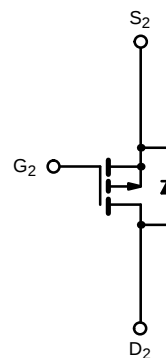
N- and P-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY			
	V _{DS} (V)	R _{DS(ON)} (Ω)	I _D (A)
N-Channel	30	0.025 @ V _{GS} = 10 V	± 6.9
		0.035 @ V _{GS} = 4.5 V	± 5.8
P-Channel	-30	0.032 @ V _{GS} = -10 V	± 6.1
		0.045 @ V _{GS} = -4.5 V	± 5.1

TrenchFET®
Power MOSFETs



N-Channel MOSFET



P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)					
PARAMETER		SYMBOL	N-CHANNEL	P-CHANNEL	UNIT
Drain-Source Voltage		V _{DS}	30	−30	V
Gate-Source Voltage		V _{GS}	±20	±20	
Continuous Drain Current (T _J = 150°C) ^A	T _A = 25°C	I _D	±6.9	±6.1	A
	T _A = 70°C		±5.5	±4.9	
Pulsed Drain Current		I _{DM}	±40	±40	
Continuous Source Current (Diode Conduction) ^A		I _S	1.7	−1.7	
Maximum Power Dissipation ^A	T _A = 25°C	P _D	2.0		W
	T _A = 70°C		1.3		
Operating Junction and Storage Temperature Range		T _J , T _{stg}	−55 to 150		°C

THERMAL RESISTANCE RATINGS

PARAMETER	SYMBOL	N- OR P-CHANNEL	UNIT
Maximum Junction-to-Ambient ^A	R _{thJA}	62.5	°C/W

Notes

A. Surface Mounted on FR4 Board, t ≤ 10 sec.

Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70666.

SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

PARAMETER	SYMBOL	TEST CONDITION		MIN	TYP	MAX	UNIT
STATIC							
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	N-Ch	1.0			V
		V _{DS} = V _{GS} , I _D = −250 μA	P-Ch	−1.0			
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V	N-Ch P-Ch			±100 ±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30 V, V _{GS} = 0 V	N-Ch			1	μA
		V _{DS} = −30 V, V _{GS} = 0 V	P-Ch			−1	
		V _{DS} = 30 V, V _{GS} = 0 V, T _J = 55°C	N-Ch			25	
		V _{DS} = −30 V, V _{GS} = 0 V, T _J = 55°C	P-Ch			−25	
On-State Drain Current ^B	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 10 V	N-Ch	20			A
		V _{DS} ≤ −5 V, V _{GS} = −10 V	P-Ch	−20			
Drain-Source On-State Resistance ^B	r _{DS(on)}	V _{GS} = 10 V, I _D = 6.9 A	N-Ch		0.020	0.025	Ω
		V _{GS} = −10 V, I _D = −6.1 A	P-Ch		0.026	0.032	
		V _{GS} = 4.5 V, I _D = 5.8 A	N-Ch		0.026	0.035	
		V _{GS} = −4.5 V, I _D = −5.1 A	P-Ch		0.036	0.045	
Forward Transconductance ^B	g _{fs}	V _{DS} = 15 V, I _D = 6.9 A	N-Ch		25		S
		V _{DS} = −15 V, I _D = −6.1 A	P-Ch		16		
Diode Forward Voltage ^B	V _{SD}	I _S = 1.7 A, V _{GS} = 0 V	N-Ch			1.2	V
		I _S = −1.7 A, V _{GS} = 0 V	P-Ch			−1.2	
DYNAMICA							
Total Gate Charge	Q _g	N-Channel V _{DS} = 15 V, V _{GS} = 10 V, I _D = 6.9 A P-Channel V _{DS} = −15 V, V _{GS} = −10 V, I _D = −6.1 A	N-Ch P-Ch		30 32	50 50	nC
Gate-Source Charge	Q _{gs}		N-Ch P-Ch		7.5 7.0		
Gate-Drain Charge	Q _{gd}		N-Ch P-Ch		3.5 5.0		
Turn-On Delay Time	t _{d(on)}		N-Ch P-Ch		12 10	20 20	
Rise Time	t _r	N-Channel V _{DD} = 15 V, R _L = 10 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω P-Channel V _{DD} = −15 V, R _L = 10 Ω I _D ≅ −1 A, V _{GEN} = −10 V, R _G = 6 Ω	N-Ch P-Ch		10 10	20 20	ns
Turn-Off Delay Time	t _{d(off)}		N-Ch P-Ch		60 55	90 80	
Fall Time	t _f		N-Ch P-Ch		15 25	30 40	
Source-Drain Reverse Recovery Time	t _{rr}		I _F = 1.7 A, di/dt = 100 A/μs I _F = −1.7 A, di/dt = 100 A/μs	N-Ch P-Ch		50 50	

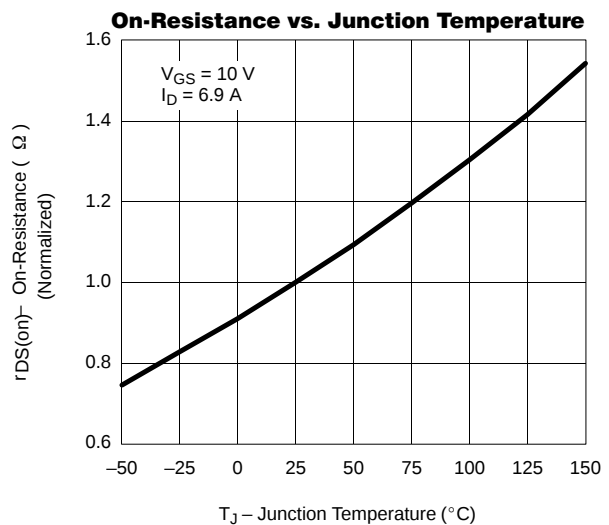
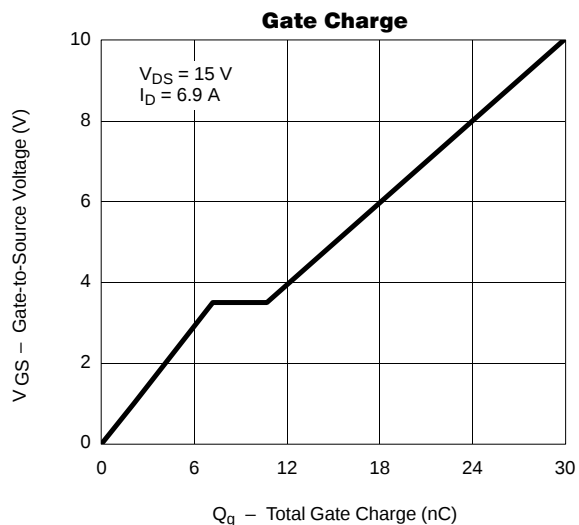
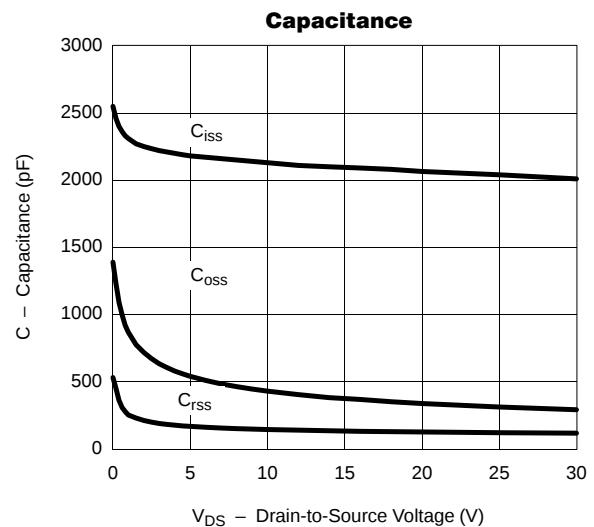
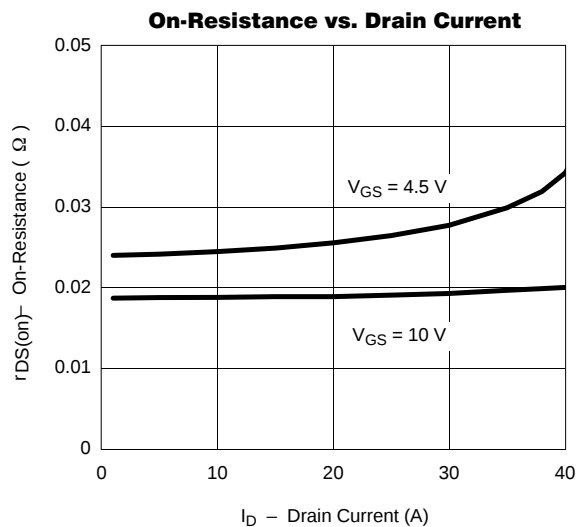
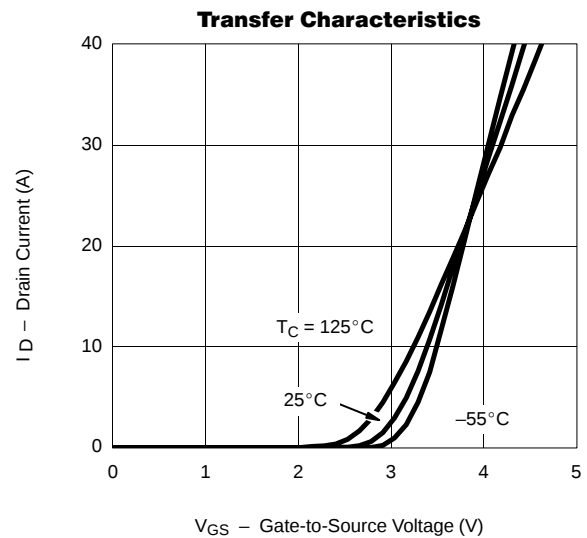
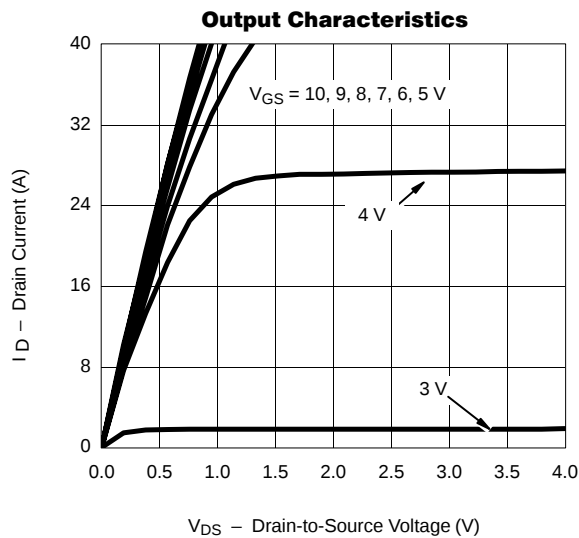
Notes

- A. Guaranteed by design, not subject to production testing.
 B. Pulse test; pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$.



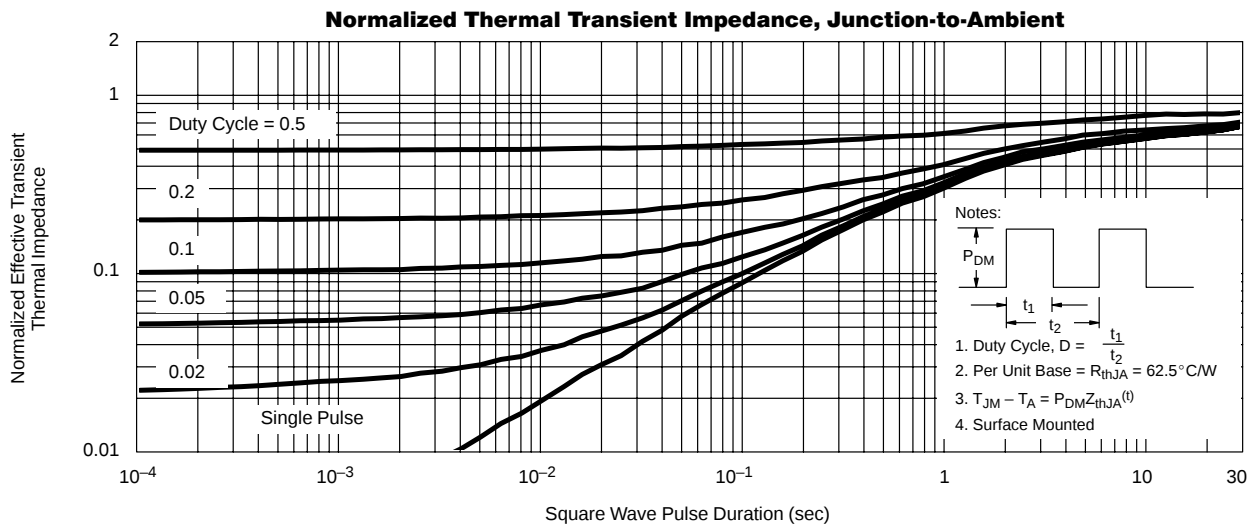
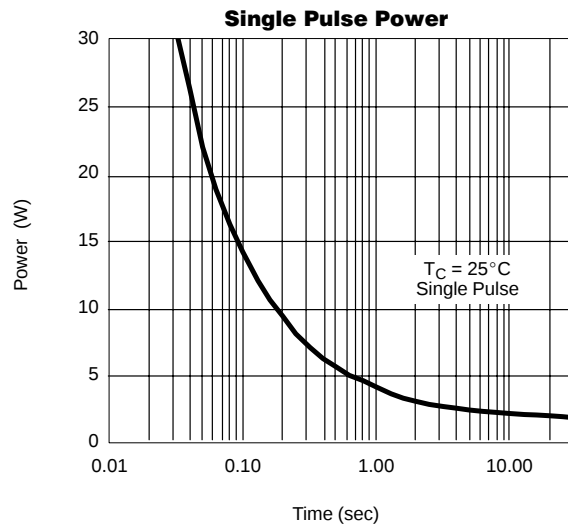
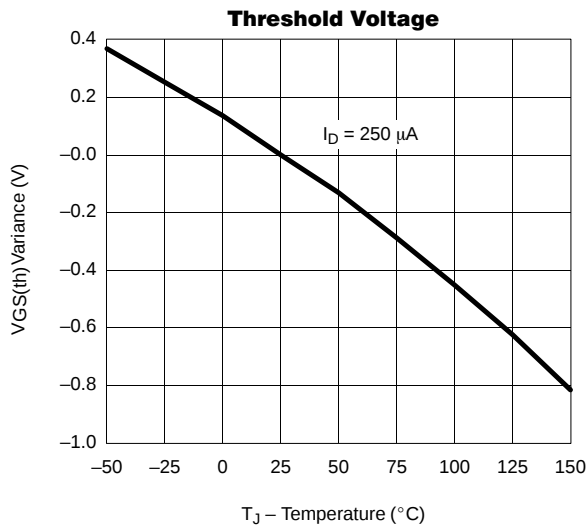
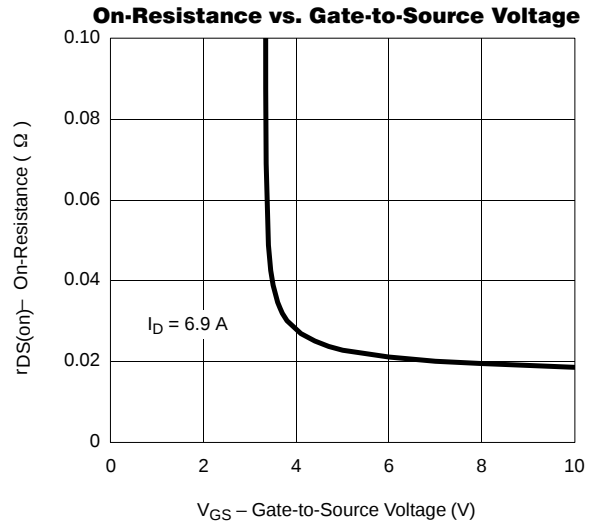
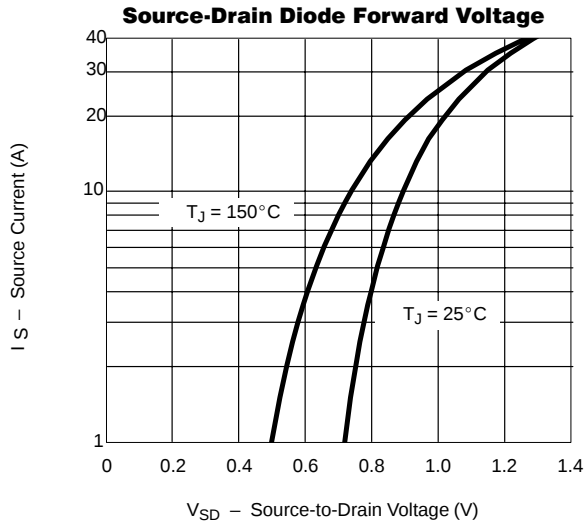
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

N-CHANNEL



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

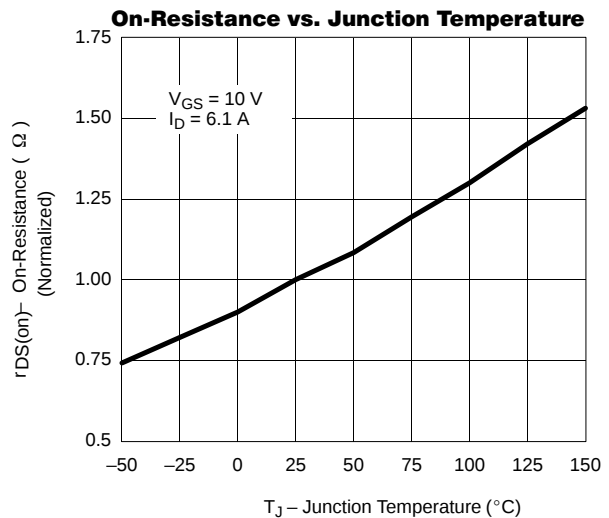
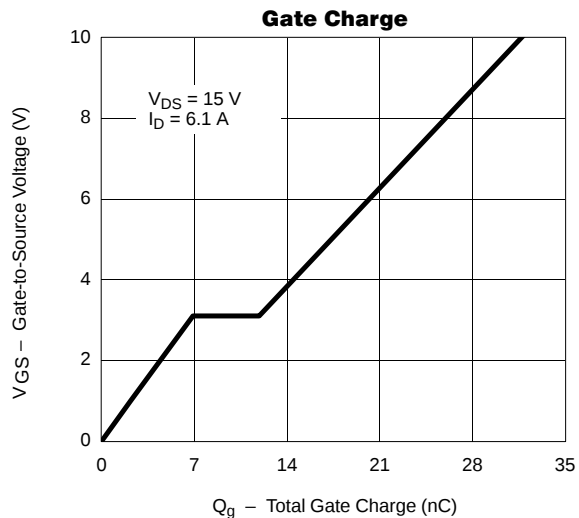
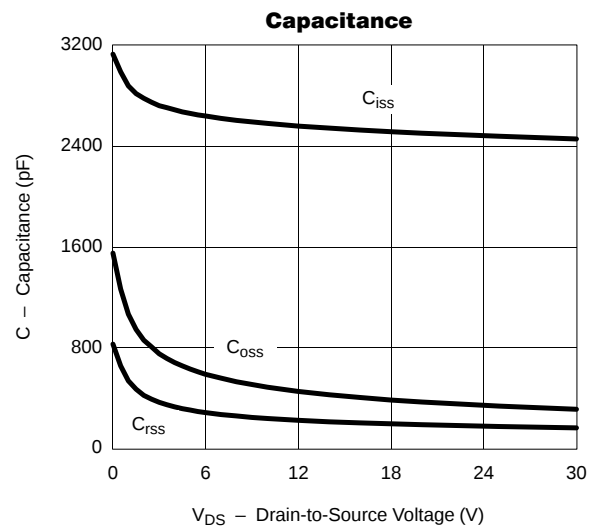
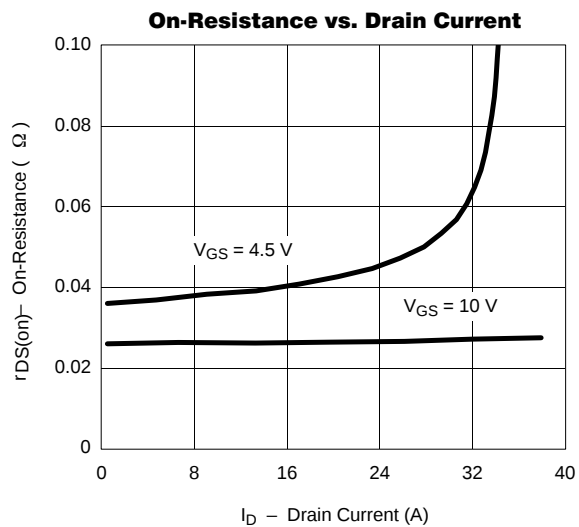
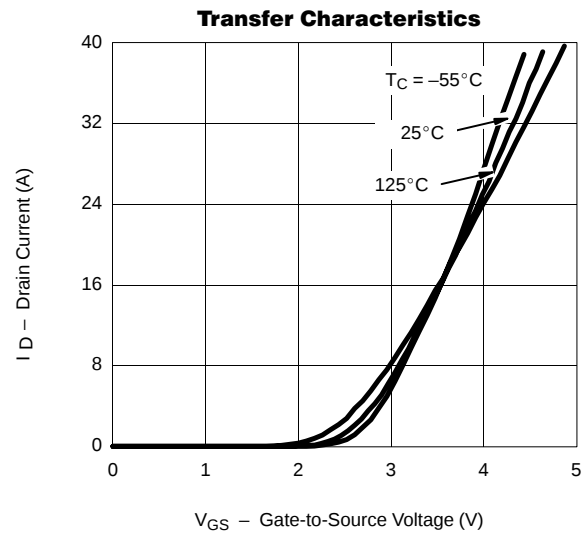
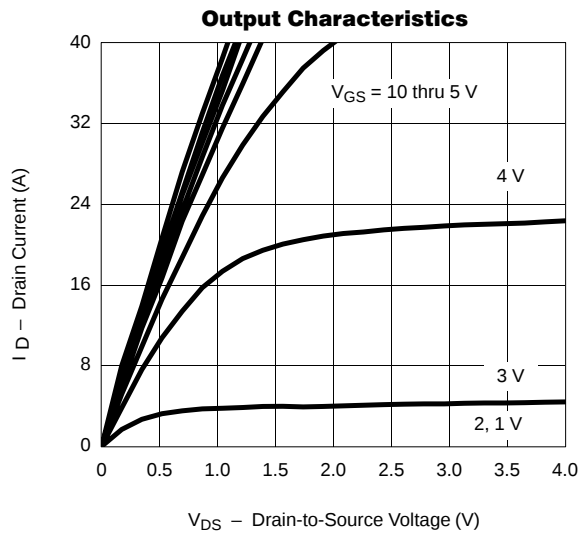
N-CHANNEL





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL

