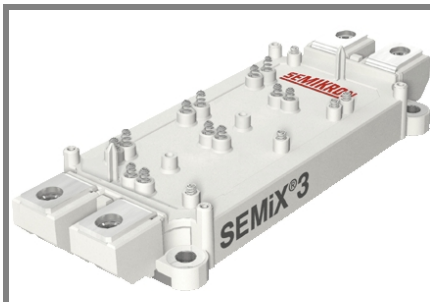


SEMiX 403GB128Ds



SEMiX® 3s

SPT IGBT Modules

SEMiX 403GB128Ds

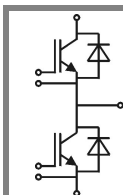
Preliminary Data

Features

- Homogeneous Si
- SPT = Soft-Punch-Through technology
- $V_{CE(sat)}$ with positive temperature coefficient
- High short circuit capability

Typical Applications

- AC inverter drives
- UPS
- Electronic welders up to 20 kHz

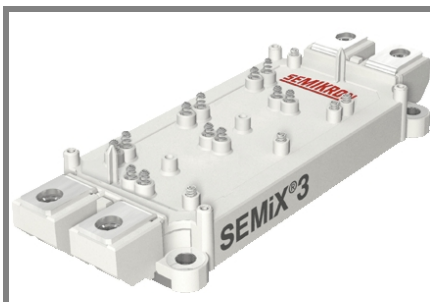


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Absolute Maximum Ratings		T _{case} = 25°C, unless otherwise specified		
Symbol	Conditions	Values		Units
IGBT				
V _{CES}	T _j = 25 °C	1200		V
I _C	T _j = 150 °C	T _{case} = 25 °C	420	A
		T _{case} = 80 °C	300	A
I _{CRM}	I _{CRM} =2xI _{Cnom}	450		A
V _{GES}		±20		V
t _{psc}	V _{CC} = 600 V; V _{GE} ≤ 20 V; T _j = 125 °C V _{CES} < 1200 V	10		μs
Inverse Diode				
I _F	T _j = 150 °C	T _{case} = 25 °C	340	A
		T _{case} = 80 °C	230	A
I _{FRM}	I _{FRM} = 2xI _{Fnom}	450		A
I _{FSM}	t _p = 10 ms; sin. T _j = 25 °C	2000		A
Module				
I _{t(RMS)}		600		A
T _{vj}		-40 ... + 150		°C
T _{stg}		-40 ... + 125		°C
V _{isol}	AC, 1 min.	4000		V

Characteristics			T _{case} = 25°C, unless otherwise specified			
Symbol	Conditions		min.	typ.	max.	Units
IGBT						
V _{GE(th)}	V _{GE} = V _{CE} , I _C = 9 mA		4,5	5	6,5	V
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES} T _j = 25 °C				0,3	mA
V _{CE0}	T _j = 25 °C T _j = 125 °C			1	1,15	V
				0,9	1,05	V
r _{CE}	V _{GE} = 15 V	T _j = 25°C		4	5,3	mΩ
		T _j = 125°C		5,3	6,7	mΩ
V _{CE(sat)}	I _{Cnom} = 225 A, V _{GE} = 15 V	T _j = 25°C _{chiplev.}		1,9	2,35	V
		T _j = 125°C _{chiplev.}		2,3	2,55	V
C _{ies}	V _{CE} = 25, V _{GE} = 0 V f = 1 MHz			18,6		nF
C _{oes}				2,2		nF
C _{res}					2,1	
Q _G	V _{GE} = -8 V ... +15 V			2000		nC
t _{d(on)}	R _{Gon} = 4 Ω	V _{CC} = 600V I _{Cnom} = 225A T _j = 125 °C		145		ns
t _r				60		ns
E _{on}			20		mJ	
t _{d(off)}	R _{Goff} = 4 Ω			575		ns
t _f				70		ns
E _{off}				23		mJ
R _{th(j-c)}	per IGBT				0,075	K/W

SEMiX 403GB128Ds



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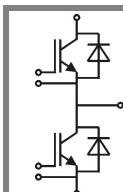
Preliminary Data

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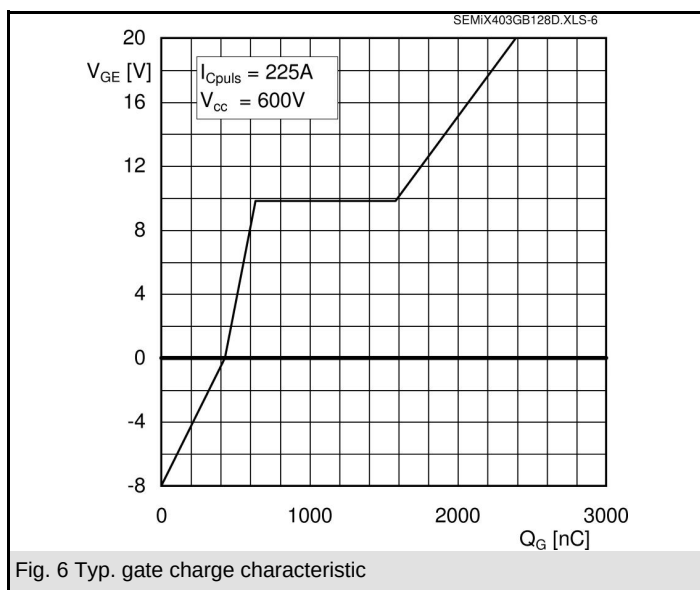
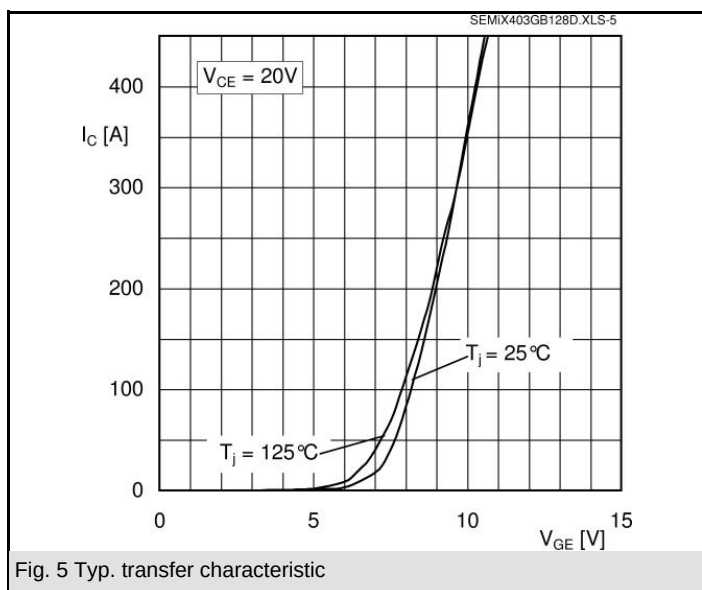
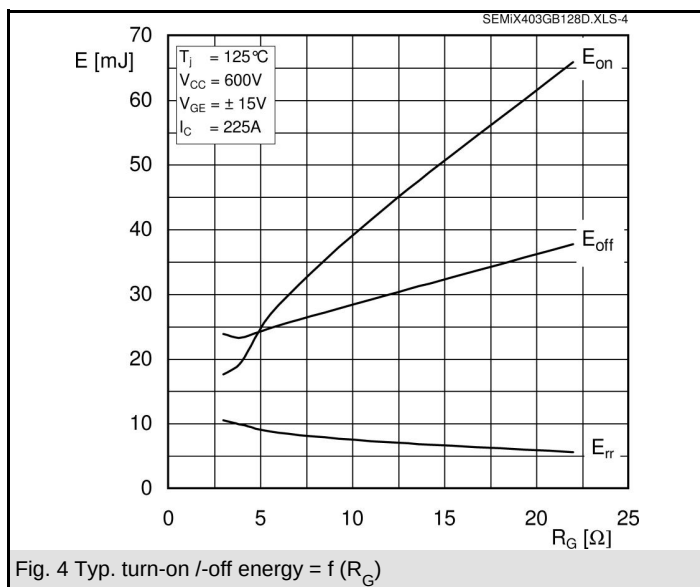
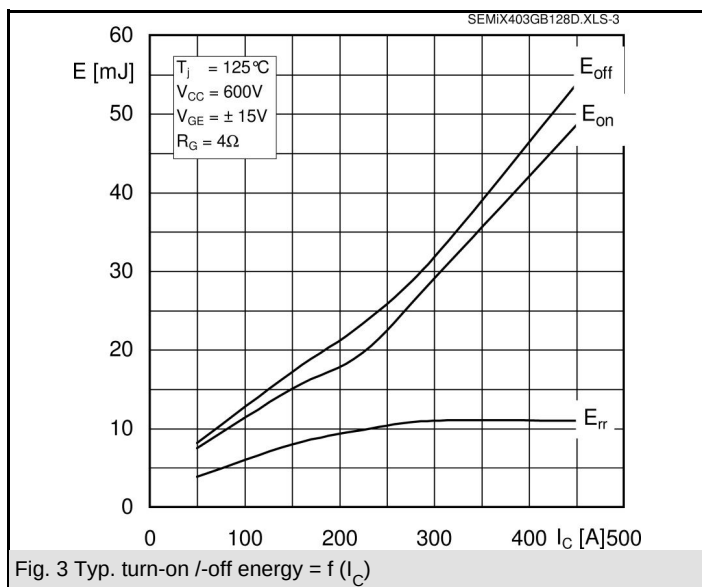
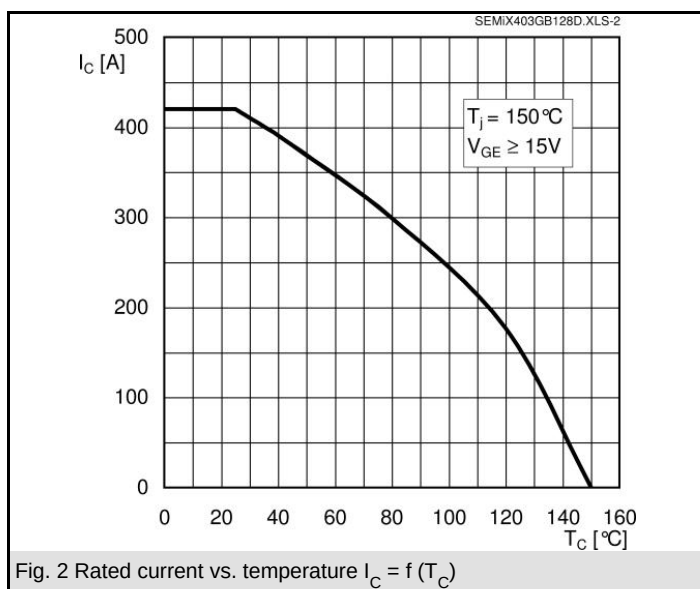
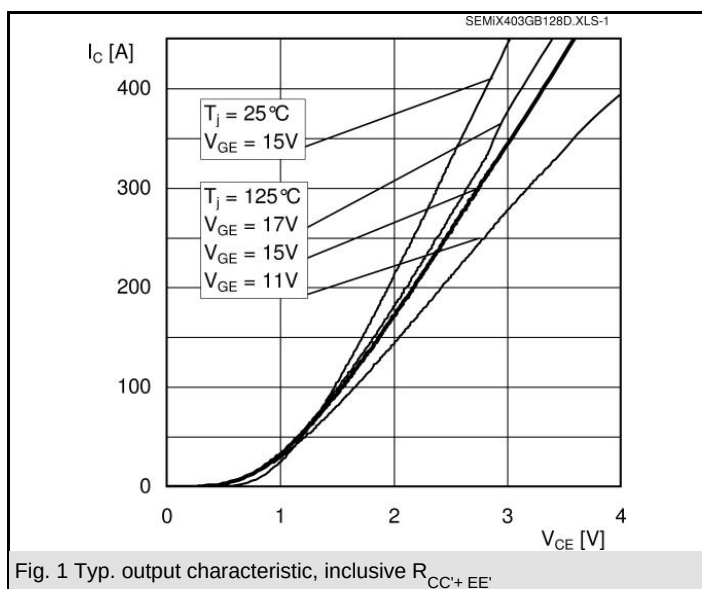


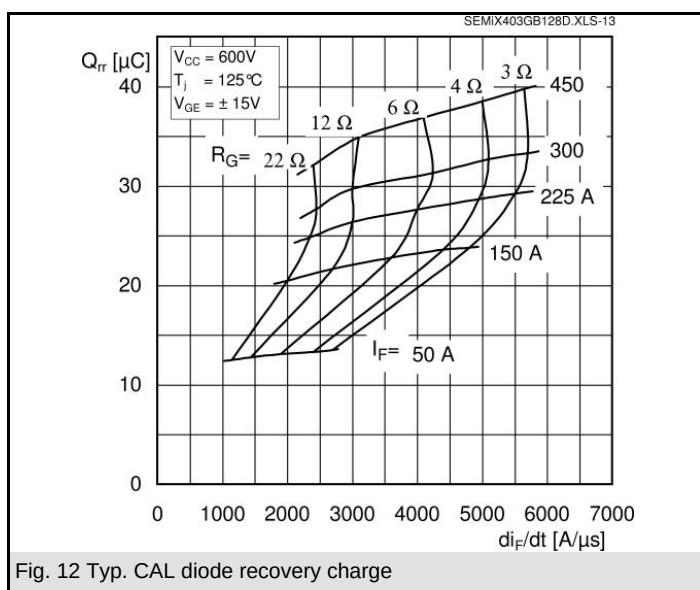
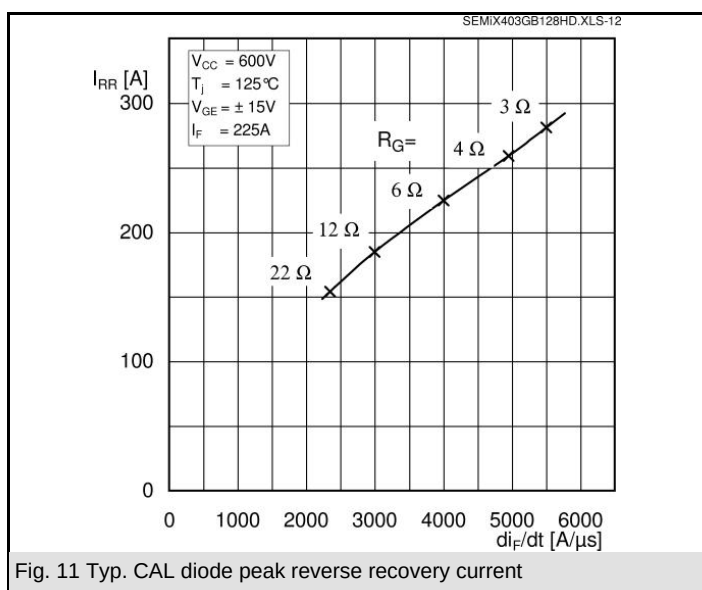
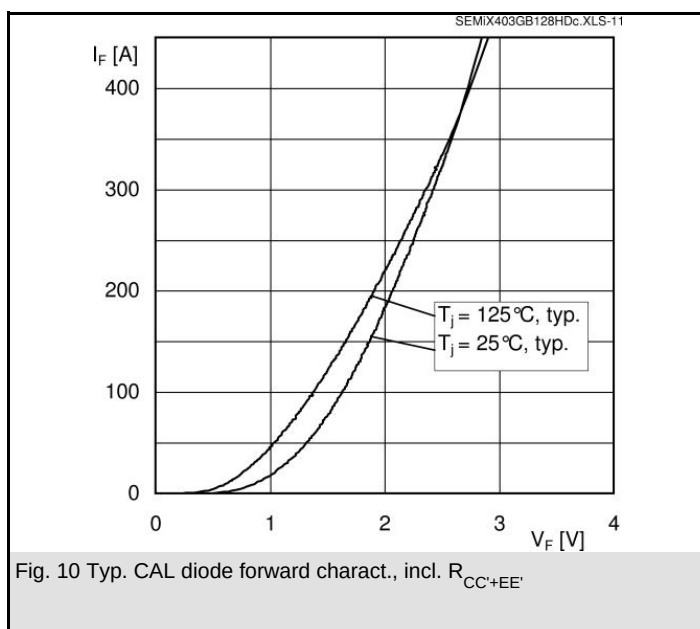
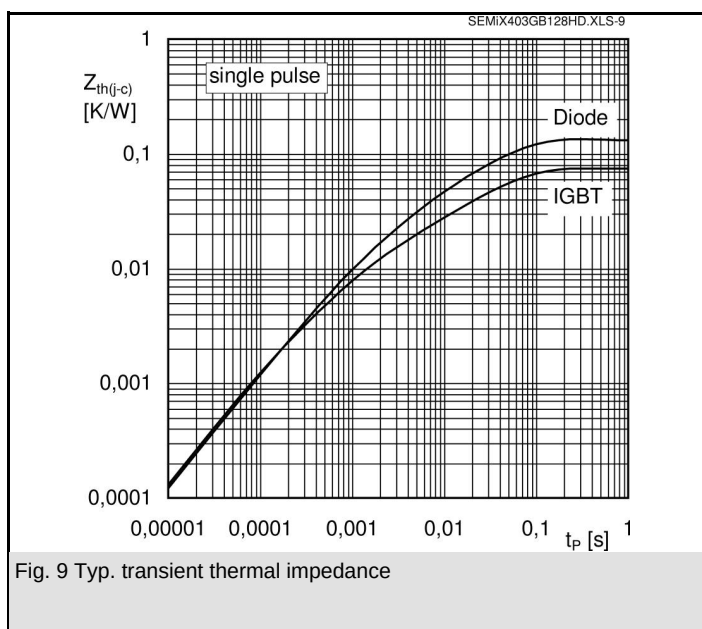
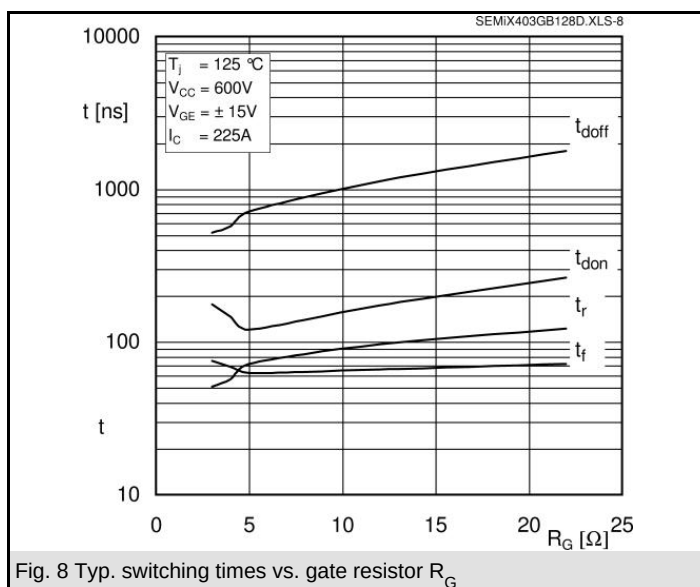
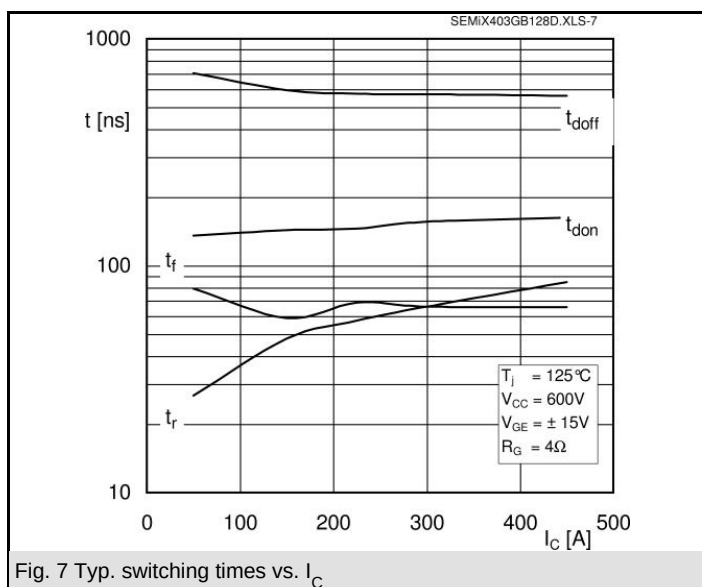
GB

Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 225 \text{ A}; V_{GE} = 0 \text{ V}$				
	$T_j = 25 \text{ }^\circ\text{C}_{chiplev.}$		2	2,5	V
	$T_j = 125 \text{ }^\circ\text{C}_{chiplev.}$		1,8	2,3	V
V_{F0}					
	$T_j = 25 \text{ }^\circ\text{C}$		1,1	1,2	V
	$T_j = 125 \text{ }^\circ\text{C}$				V
r_F					
	$T_j = 25 \text{ }^\circ\text{C}$		4	5,8	mΩ
	$T_j = 125 \text{ }^\circ\text{C}$				mΩ
I_{RRM}	$I_{Fnom} = 225 \text{ A}$		260		A
Q_{rr}	$di/dt = 4950 \text{ A}/\mu\text{s}$		29		μC
E_{off}	$V_{GE} = -15 \text{ V}; V_{CC} = 600 \text{ V}$		10		mJ
$R_{th(j-c)D}$	per diode			0,133	K/W
Module					
L_{CE}			20		nH
$R_{CC'+EE'}$	res., terminal-chip		0,7		mΩ
	$T_{case} = 25 \text{ }^\circ\text{C}$				
	$T_{case} = 125 \text{ }^\circ\text{C}$		1		mΩ
$R_{th(c-s)}$	per module		0,04		K/W
M_s	to heat sink (M5)	3		5	Nm
M_t	to terminals (M6)	2,5		5	Nm
w			289	300	g
Temperature sensor					
R_{100}	$T_c = 100 \text{ }^\circ\text{C}$ ($R_{25} = 5 \text{ k}\Omega$)		0,493±5%		kΩ
$B_{100/125}$	$R(T) = R_{100} \exp[B_{100/125}(1/T - 1/T_{100})]$; $T[\text{K}]; B$		3550±2%		K

This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.

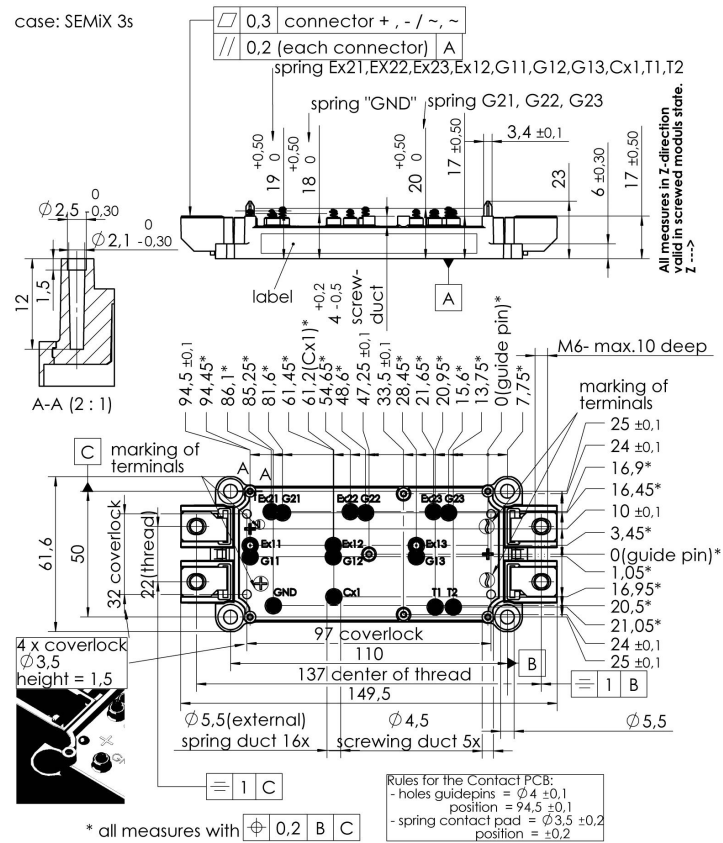




SEMiX 403GB128Ds

UL Recognized
File no. E 63 532

Dimensions in mm



Case SEMiX 3s

