

Dual P-Channel 30-V (D-S) MOSFET

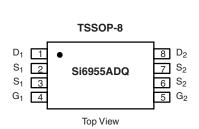
PRODUCT SUMMARY				
V _{DS} (V)	$R_{DS(on)}(\Omega)$	I _D (A)		
- 30	0.080 at V _{GS} = - 10 V	± 2.9		
	$0.135 \text{ at V}_{GS} = -4.5 \text{ V}$	± 2.2		

FEATURES

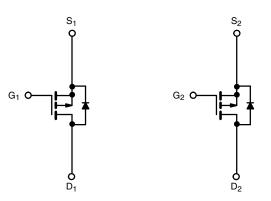
- · Halogen-free
- TrenchFET® Power MOSFETs



RoHS COMPLIANT



Ordering Information: Si6955ADQ-T1-GE3 (Lead (Pb)-free and Halogen-free)



P-Channel MOSFET

P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS T _A = 25 °C, unless otherwise noted							
Parameter		Symbol	10 s	Steady State	Unit		
Drain-Source Voltage		V _{DS}	- 30		V		
Gate-Source Voltage		V _{GS}	± 20				
Continuous Drain Current /T = 150 °C)8	T _A = 25 °C	- I _D	± 2.9	± 2.5	A		
Continuous Drain Current (T _J = 150 °C) ^a	T _A = 70 °C		± 2.3	± 2.0			
Pulsed Drain Current (10 µs Pulse Width)		I _{DM}	± 20		A		
Continuous Source Current (Diode Conduction) ^a		I _S	- 1.0	- 0.70			
Mariana Barra Biraira in A	T _A = 25 °C	- P _D	1.14	0.83	W		
Maximum Power Dissipation ^a	T _A = 70 °C		0.73	0.53			
Operating Junction and Storage Temperature Range		T _J , T _{stg}	- 55 to 150		°C		

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Manipulation to Ambient	t ≤ 10 s	- R _{thJA}	88	110	°C/W
Maximum Junction-to-Ambient ^a	Steady State		124	150	
Maximum Junction-to-Foot	Steady State	R_{thJF}	69	83	

Notes:

a. Surface Mounted on 1" x 1" FR4 board.

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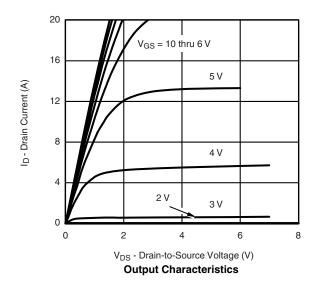
SPECIFICATIONS $T_J = 25$ °C	C, unless o	otherwise noted					
Parameter	Symbol	Test Conditions	Min.	Тур.	Max.	Unit	
Static							
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = -250 \mu A$	- 1.0			V	
Gate-Body Leakage	I _{GSS}	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 20 \text{ V}$			± 100	nA	
Zero Gate Voltage Drain Current		V _{DS} = - 24 V, V _{GS} = 0 V			- 1		
	I _{DSS}	V _{DS} = - 24 V, V _{GS} = 0 V, T _J = 55 °C			- 10	μΑ	
On-State Drain Current ^a	I _{D(on)}	$V_{DS} \ge -5 \text{ V}, V_{GS} = -10 \text{ V}$	- 15			Α	
	D	V _{GS} = - 10 V, I _D = - 2.9 A		0.062	0.080	-	
Drain-Source On-State Resistance ^a	R _{DS(on)}	V _{GS} = - 4.5 V, I _D = - 2.2 A		0.105	0.135	Ω	
Forward Transconductance ^a	9 _{fs}	V _{DS} = - 15 V, I _D = - 2.9 A		5		S	
Diode Forward Voltage ^a	V_{SD}	I _S = - 1.0 A, V _{GS} = 0 V		- 0.82	- 1.2	V	
Dynamic ^b							
Total Gate Charge	Q_g			5.8	8		
Gate-Source Charge	Q _{gs}	V_{DS} = - 10 V, V_{GS} = - 5 V, I_D = - 2.9 A		2		nC	
Gate-Drain Charge	Q_{gd}			1.9			
Turn-On Delay Time	t _{d(on)}			8	15		
Rise Time	t _r	V_{DD} = - 10 V, R_L = 10 Ω		9	18		
Turn-Off Delay Time	t _{d(off)}	$I_D\cong$ - 1 A, V_{GEN} = - 10 V, R_G = 6 Ω		21	40	ns	
Fall Time	t _f			10	20		
Source-Drain Reverse Recovery Time	t _{rr}	I _F = - 1.0 A, dl/dt = 100 A/μs		30	50		

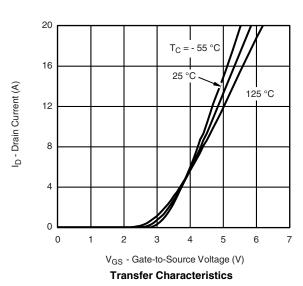
Notes:

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

Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

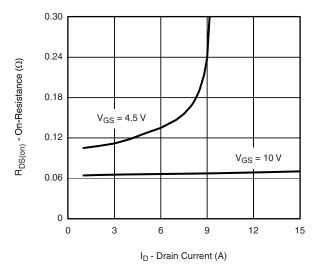
TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted



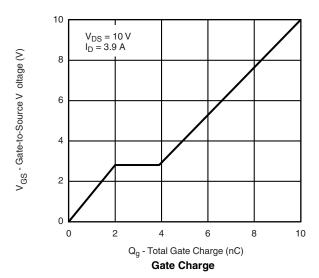


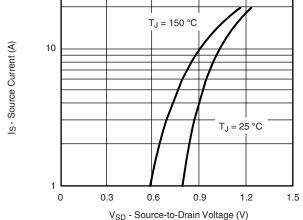


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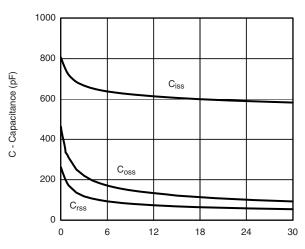


On-Resistance vs. Drain Current



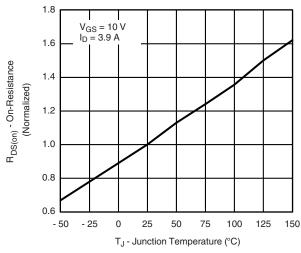


Source-Drain Diode Forward Voltage

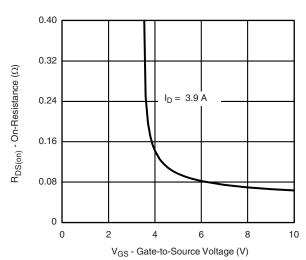


V_{DS} - Drain-to-Source Voltage (V)

Capacitance



On-Resistance vs. Junction Temperature



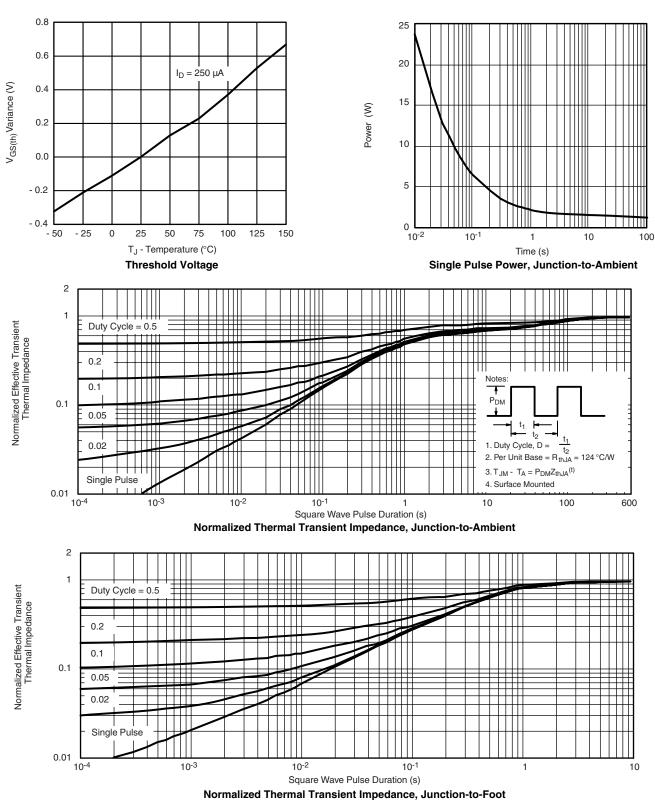
On-Resistance vs. Gate-to-Source Voltage

30

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TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted



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