



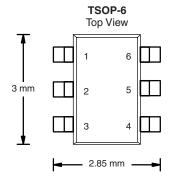
P-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY				
V _{DS} (V)	$R_{DS(on)}\left(\Omega\right)$	I _D (A)		
- 30	$0.054 \text{ at V}_{GS} = -10 \text{ V}$	- 5.0		
	0.100 at V _{GS} = - 4.5 V	- 3.7		

FEATURES

- Halogen-free According to IEC 61249-2-21 Available
- TrenchFET® Power MOSFETs

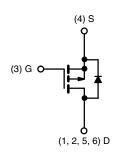




Ordering Information: Si3457BDV-T1-E3 (Lead (Pb)-free)

Si3457BDV-T1-GE3 (Lead (Pb)-free and Halogen-free)

Marking Code: 7Bxxx



P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS T _A = 25 °C, unless otherwise noted						
Parameter		Symbol	5 s	Steady State	Unit	
Drain-Source Voltage		V _{DS}	- 30		V	
Gate-Source Voltage		V _{GS}	± 20			
Outliness Paris Outline (T. 450.00)	T _A = 25 °C	- I _D	- 5.0	- 3.7		
Continuous Drain Current (T _J = 150 °C) ^a	T _A = 70 °C		- 4.0	- 3.0	٨	
Pulsed Drain Current		I _{DM}	- 20		Α	
Continuous Source Current (Diode Conduction) ^a		I _S	- 1.7	- 0.95		
W	T _A = 25 °C	- P _D	2.0	1.14	W	
Maximum Power Dissipation ^a	T _A = 70 °C		1.3	0.73		
Operating Junction and Storage Temperature Range		T _J , T _{stg}	- 55 to 150		°C	

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Mariana baratian ta Ambianta	t ≤ 5 s	- R _{thJA}	53	62.5	°C/W
Maximum Junction-to-Ambient ^a	Steady State		90	110	
Maximum Junction-to-Foot (Drain)	Steady State	R_{thJF}	25	36	

Notes

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

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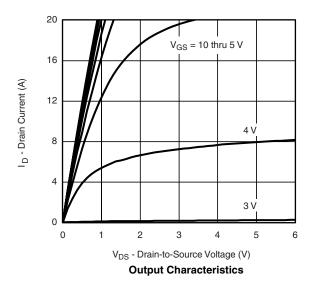
SPECIFICATIONS T _J = 25 °C, unless otherwise noted							
Parameter	Symbol	Test Conditions	Min.	Тур.	Max.	Unit	
Static							
Gate Threshold Voltage	V _{GS(th)}	$V_{DS} = V_{GS}, I_{D} = -250 \mu A$	- 1.0		- 3	٧	
Gate-Body Leakage	I _{GSS}	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 20 \text{ V}$			± 100	nA	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = - 30 V, V _{GS} = 0 V	, V _{GS} = 0 V		- 1	μΑ	
		V _{DS} = - 30 V, V _{GS} = 0 V, T _J = 85 °C			- 5		
On-State Drain Current ^a	I _{D(on)}	$V_{DS} \le -5 \text{ V}, V_{GS} = -10 \text{ V}$	- 20			Α	
	В	V _{GS} = - 10 V, I _D = - 5.0 A		0.044	0.054	0	
Drain-Source On-State Resistance ^a	R _{DS(on)}	$V_{GS} = -4.5 \text{ V}, I_D = -3.7 \text{ A}$		0.082	0.100	Ω	
Forward Transconductance ^a	9 _{fs}	V _{DS} = - 15 V, I _D = - 5.0 A		10		S	
Diode Forward Voltage ^a	V_{SD}	I _S = - 1.7 A, V _{GS} = 0 V		- 0.8	- 1.2	V	
Dynamic ^b							
Total Gate Charge	Q_g			12.5	19	nC	
Gate-Source Charge	Q_{gs}	V _{DS} = - 15 V, V _{GS} = - 10 V, I _D = - 5.0 A		2.1			
Gate-Drain Charge	Q_{gd}			3.5			
Turn-On Delay Time	t _{d(on)}			7	15		
Rise Time	t _r	1 1011 0 0 0		10	15	ns	
Turn-Off Delay Time	t _{d(off)}			30	45		
Fall Time	t _f			22	35		
Source-Drain Reverse Recovery Time	t _{rr}	I _F = - 1.7 A, dl/dt = 100 A/μs		25	60		

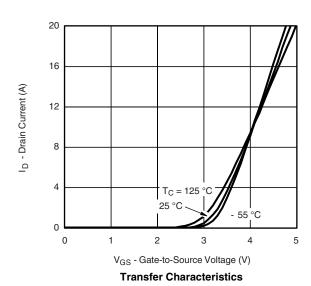
Notes:

- a. Pulse test; pulse width \leq 300 μ 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



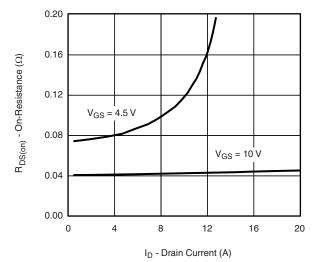




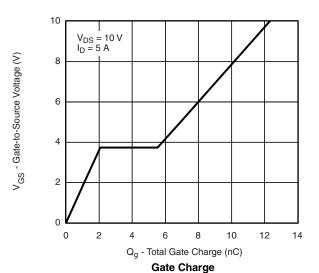


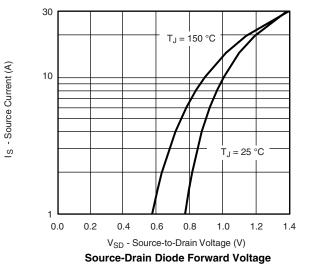


TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted



On-Resistance vs. Drain Current

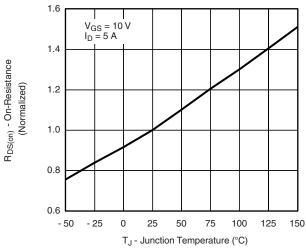




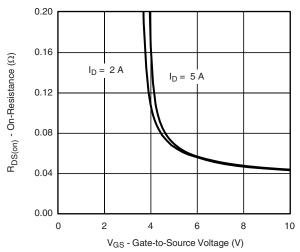
1000 800 C - Capacitance (pF) C_{iss} 600 400 C_{oss} 200 $\mathsf{C}_{\mathsf{rss}}$ 0 0 6 12 18 24 30

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





On-Resistance vs. Junction Temperature

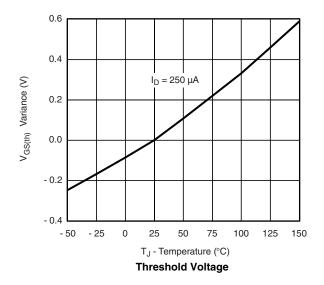


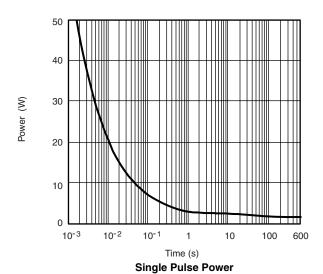
On-Resistance vs. Gate-to-Source Voltage

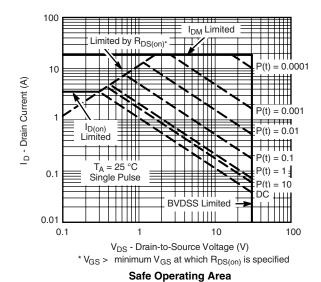
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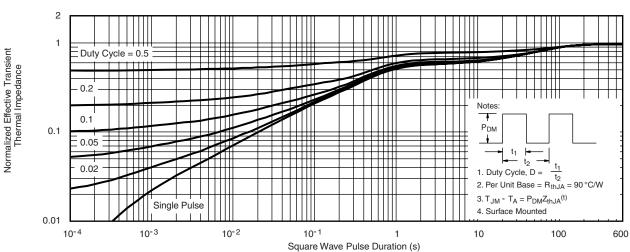
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TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted





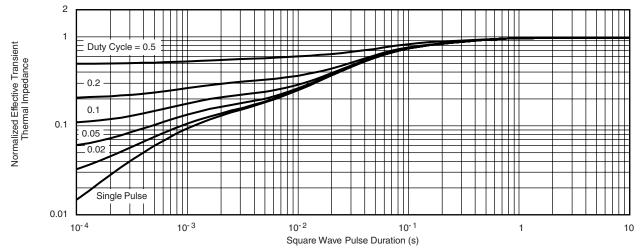




Normalized Thermal Transient Impedance, Junction-to-Ambient



TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted



Normalized Thermal Transient Impedance, Junction-to-Foot

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