

Vishay Siliconix

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

PRODUCT SUMMARY					
V _{DS} (V)	R _{DS(on)} (Ω)	I _D (A)			
- 30	0.054 at V _{GS} = - 10 V	- 5.0			
	0.100 at V _{GS} = - 4.5 V	- 3.7			

FEATURES

• Halogen-free According to IEC 61249-2-21 Available

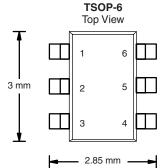
(3) G O

(4) S

(1, 2, 5, 6) D P-Channel MOSFET

• TrenchFET[®] Power MOSFETs





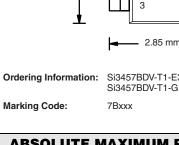
Ordering Information:	Si3457BDV-T1-E3 (Lead (Pb)-free) Si3457BDV-T1-GE3 (Lead (Pb)-free and Halogen-free)
Marking Code	70,000

ABSOLUTE MAXIMUM RATINGS	T _A = 25 °C, unles	ss otherwise r	noted		
Parameter		Symbol	5 s	Steady State	Unit
Drain-Source Voltage		V _{DS}	- 30		V
Gate-Source Voltage		V _{GS}	± 20		
	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	
Pulsed Drain Current		I _{DM}	- 20		A
Continuous Source Current (Diode Conduction) ^a		۱ _S	- 1.7	- 0.95	
	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	
	t ≤ 5 s	- R _{thJA} R _{thJF}	53	62.5		
Maximum Junction-to-Ambient ^a	Steady State		90	110	°C/W	
Maximum Junction-to-Foot (Drain)	Steady State		25	36		

Notes:

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



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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	V	
Gate-Body Leakage	I _{GSS}	$V_{DS} = 0 V, V_{GS} = \pm 20 V$			± 100	nA	
Zero Gate Voltage Drain Current	I _{DSS}	$V_{DS} = -30 \text{ V}, \text{ V}_{GS} = 0 \text{ V}$			- 1		
		V_{DS} = - 30 V, V_{GS} = 0 V, T_{J} = 85 °C			- 5	μA	
On-State Drain Current ^a	I _{D(on)}	V_{DS} \leq - 5 V, V_{GS} = - 10 V	- 20			А	
Drain-Source On-State Resistance ^a	R _{DS(on)}	V _{GS} = - 10 V, I _D = - 5.0 A		0.044	0.054		
		V _{GS} = - 4.5 V, I _D = - 3.7 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	Qg			12.5	19		
Gate-Source Charge	Q _{gs}	V_{DS} = - 15 V, V_{GS} = - 10 V, I_{D} = - 5.0 A		2.1		nC	
Gate-Drain Charge	Q _{gd}			3.5		1	
Turn-On Delay Time	t _{d(on)}			7	15		
Rise Time	t _r	V_{DD} = - 15 V, R_{L} = 15 Ω		10	15		
Turn-Off Delay Time	t _{d(off)}	$\text{I}_\text{D}\cong$ - 1 A, V_GEN = - 10 V, R_g = 6 Ω		30	45	ns	
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		

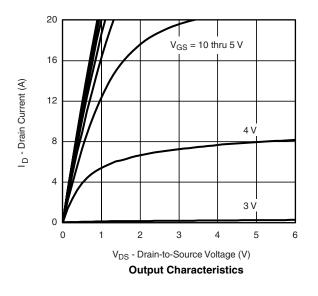
Notes:

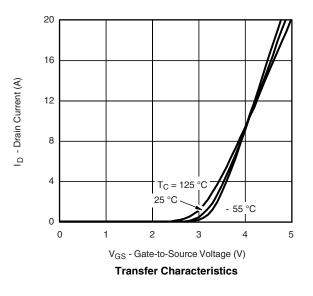
a. Pulse test; pulse width \leq 300 µs, duty cycle \leq 2 %.

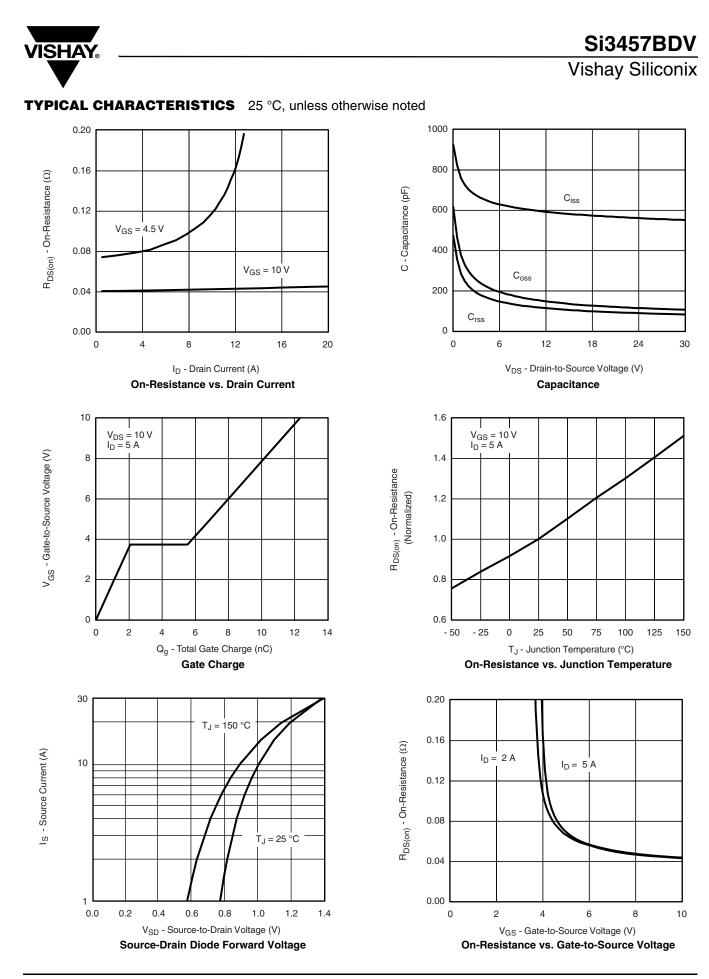
b. Guaranteed by design, not subject to production testing.

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



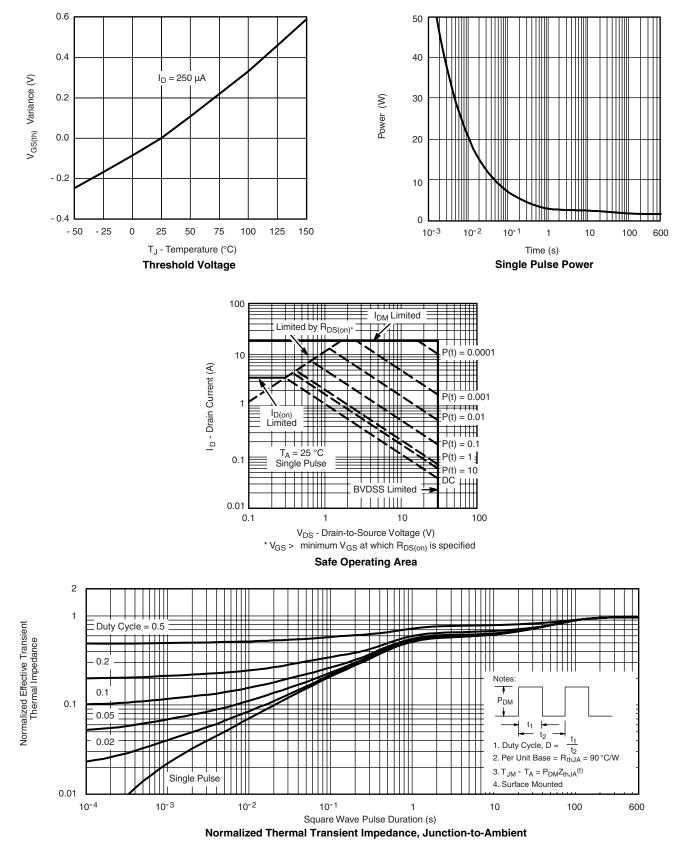




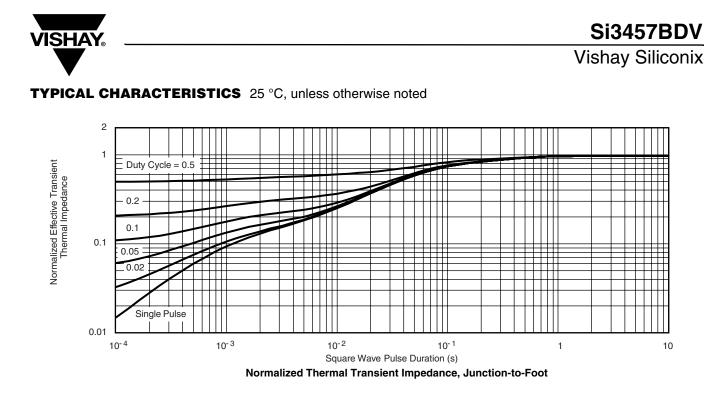
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