

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
300V	68mΩ@10V	50A

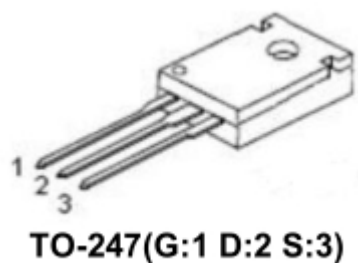
Feature

- Fast Switching
- Low Gate Charge and Rdson
- 100% Single Pulse avalanche energy Test

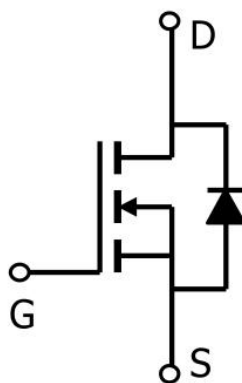
Applications

- DC-DC Converter
- Ideal for high-frequency switching and synchronous rectification

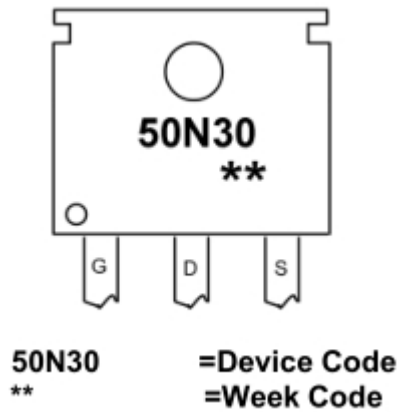
Package



Circuit diagram



Marking



Absolute maximum ratings

(T_a=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	300	V
Gate-Source Voltage	V _{GS}	±30	V
Continuous Drain Current ¹ (T _C =25°C)	I _D	50	A
Pulsed Drain Current ²	I _{DM}	200	A
Single Pulse Avalanche Energy ³	E _{AS}	6.9	
Total Power Dissipation(T _C =25°C)	P _D	95	W
Thermal Resistance Junction-Case ¹	R _{θJC}	1.32	°C/ W
Storage Temperature Range	T _{STG}	-55 to 150	°C
Operating Junction Temperature Range	T _J	-55 to 150	°C

Electrical characteristics

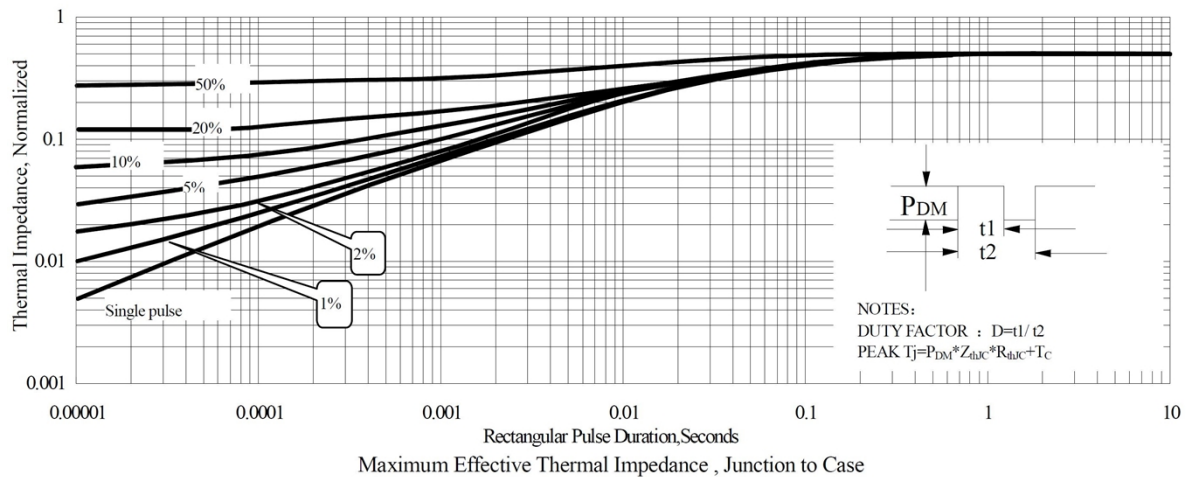
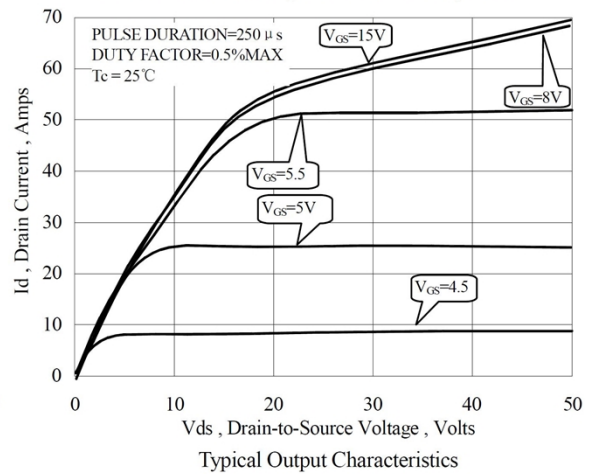
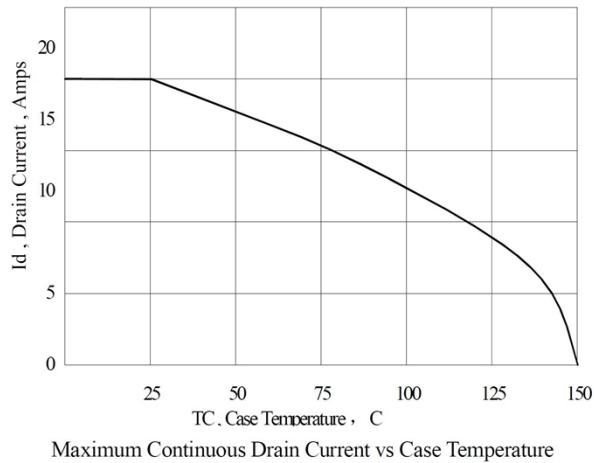
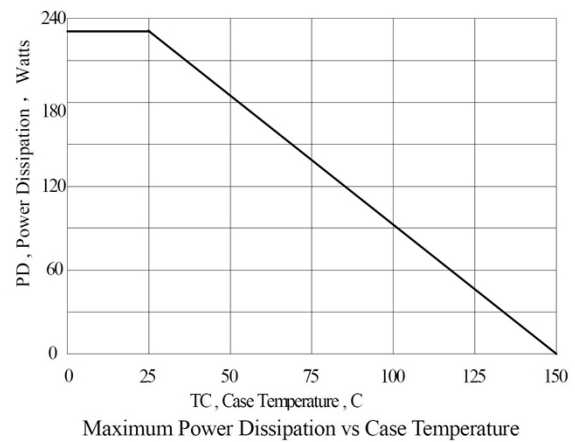
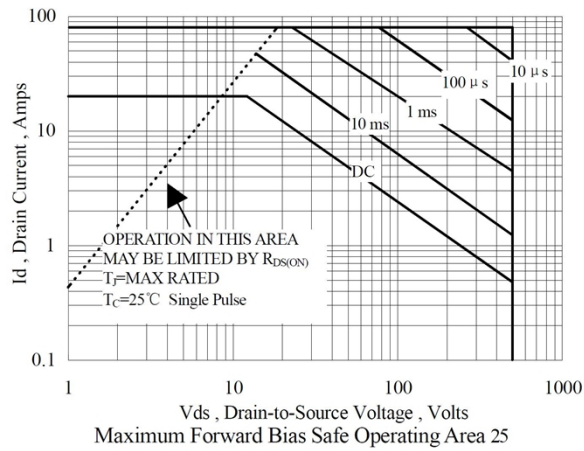
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

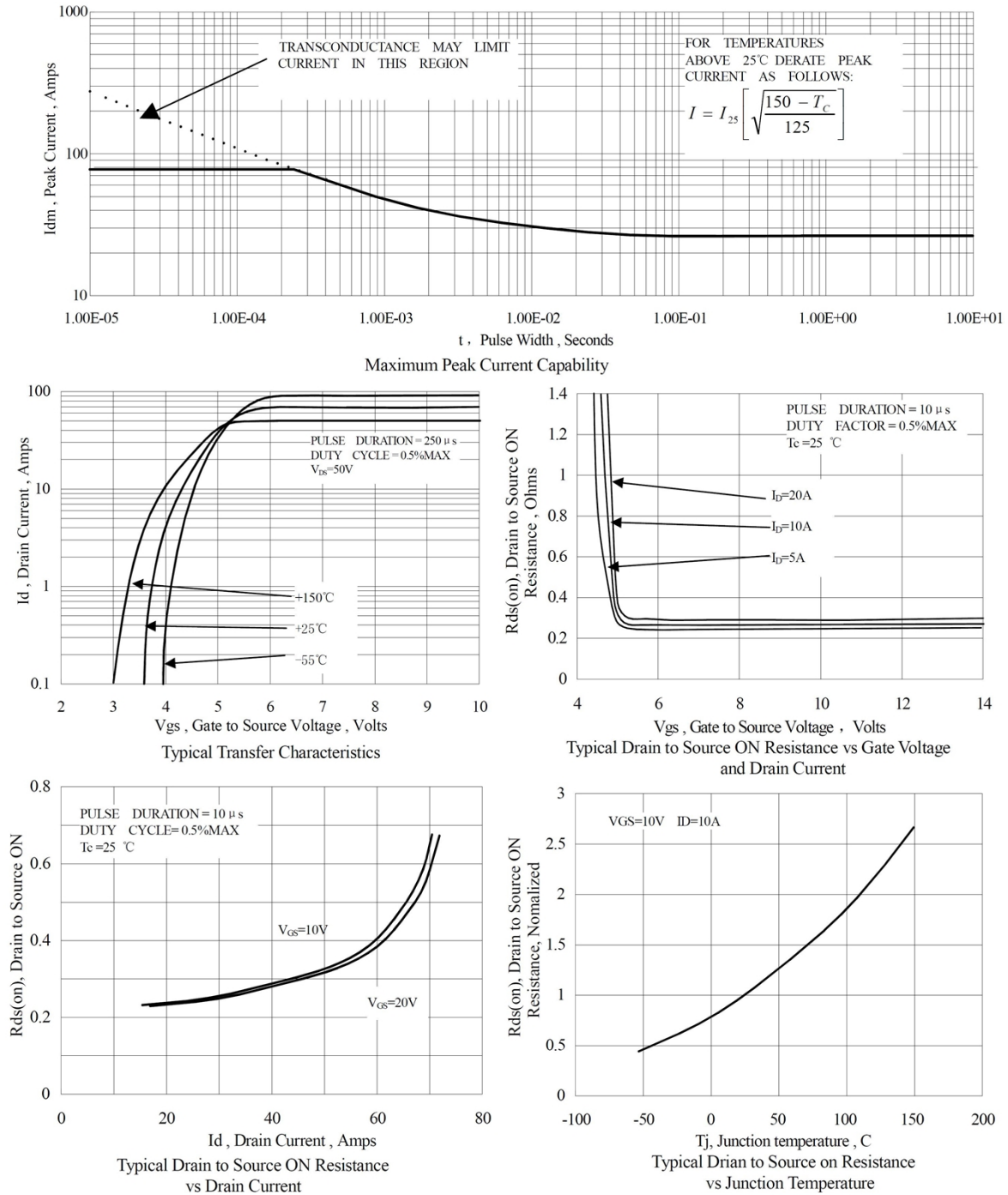
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$BV_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	300			V
Bvdss Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	$I_D = 1mA, \text{Reference } 25^{\circ}C$		0.36		V/°C
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = 240V, V_{GS} = 0V, T_J = 25^{\circ}C$			1	uA
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			±100	uA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2	3	4	V
Static Drain-Source on-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 20A$		68	85	mΩ
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$		4620		pF
Output Capacitance	C_{oss}			620		
Reverse Transfer Capacitance	C_{rss}			66		
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 150V, V_{GS} = 10V, I_D = 50A$		123		pF
Gate-Source Charge	Q_{gs}			25		
Gate-Drain Charge	Q_{gd}			47		
Turn-On Delay Time	$T_{d(on)}$	$V_{DD} = 240V, V_{GS} = 10V, R_G = 25\Omega, I_D = 50A$		62		nS
Rise Time	T_r			165		
Turn-Off Delay Time	$T_{d(off)}$			300		
Fall Time	T_f			140		

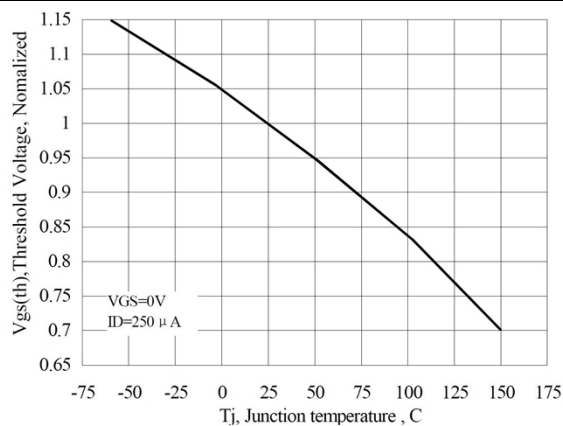
Note :

1. The data tested by surface mounted on a 1 inch² FR-4 board with 2OZcopper.
2. The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
3. The EAS data shows Max. rating . The test condition is $V_{DD} = 50V, R_G = 25\Omega, L = 10mH$

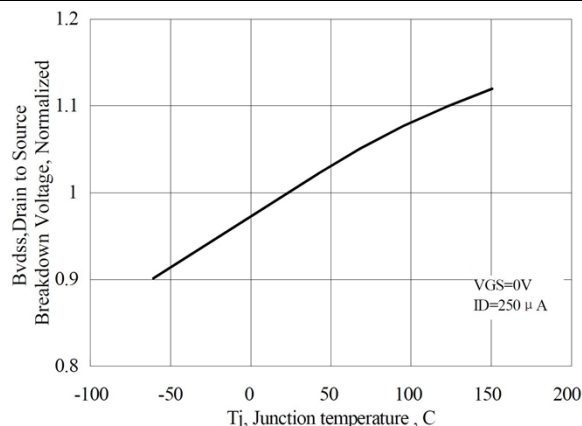
Typical Characteristics



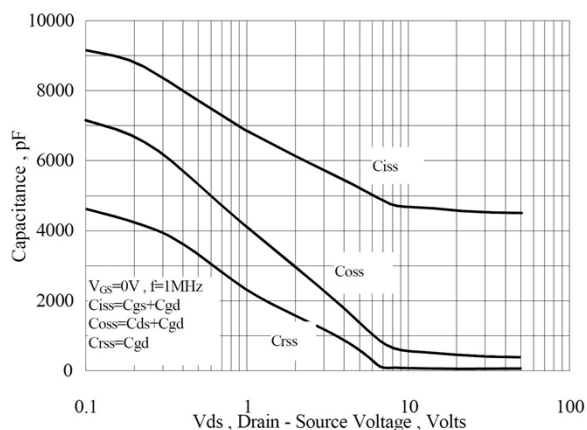




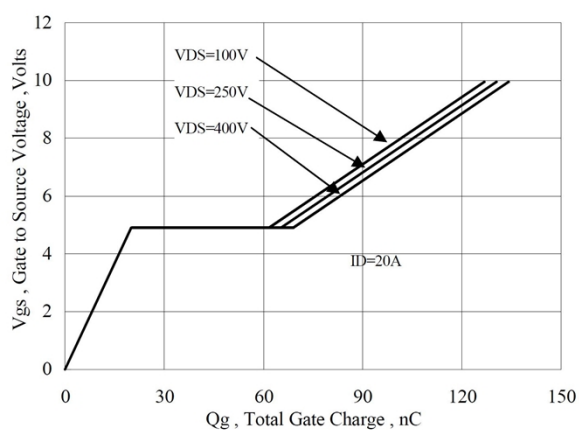
Typical Threshold Voltage vs Junction Temperature



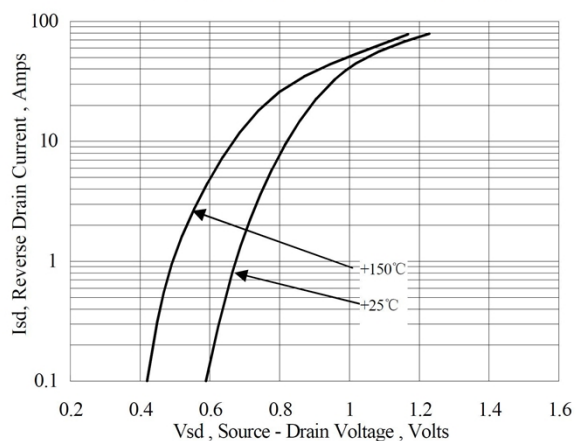
Typical Breakdown Voltage vs Junction Temperature



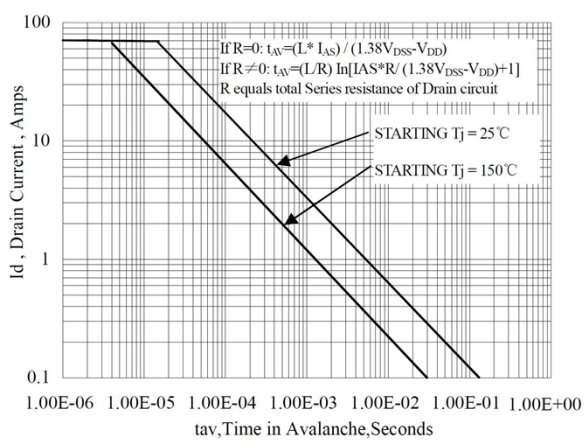
Typical Capacitance vs Drain to Source Voltage



Typical Gate Charge vs Gate to Source Voltage

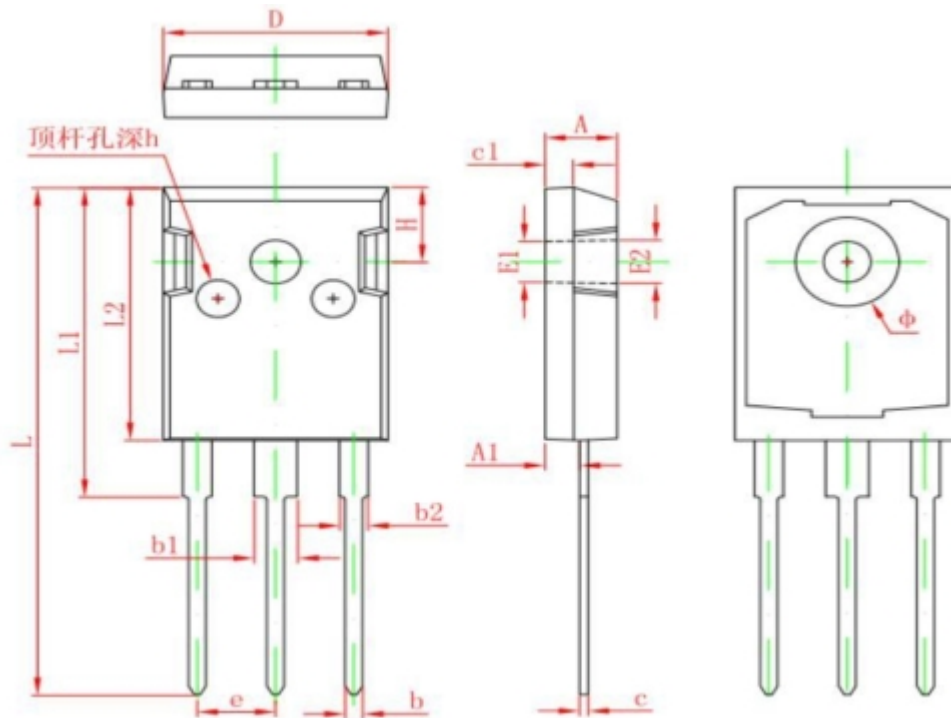


Typical Body Diode Transfer Characteristics



Unclamped Inductive Switching Capability

TO-247 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.850	5.150	0.191	0.200
A1	2.200	2.600	0.087	0.102
b	1.000	1.400	0.039	0.055
b1	2.800	3.200	0.110	0.126
b2	1.800	2.200	0.071	0.087
c	0.500	0.700	0.020	0.028
c1	1.900	2.100	0.075	0.083
D	15.450	15.750	0.608	0.620
E1	3.500 REF.		0.138 REF.	
E2	3.600 REF.		0.142 REF.	
L	40.900	41.300	1.610	1.626
L1	24.800	25.100	0.976	0.988
L2	20.300	20.600	0.799	0.811
Φ	7.100	7.300	0.280	0.287
e	5.450 TYP.		0.215 TYP.	
H	5.980 REF.		0.235 REF.	
h	0.000	0.300	0.000	0.012