



DAM10N15T

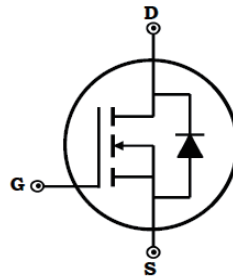
DACO SEMICONDUCTOR CO., LTD.



N-Channel Enhancement Mode MOSFET

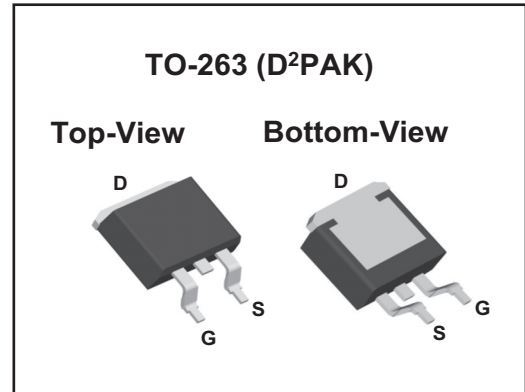
Features

- ◆ $V_{DSS} = 150V$
- ◆ $R_{DS(ON)} < 12\text{ m}\Omega @ V_{GS} = 10\text{ V}$
- ◆ Fully Avalanche Rated
- ◆ Pb Free & RoHS Compliant

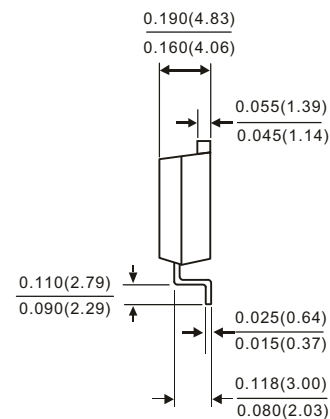
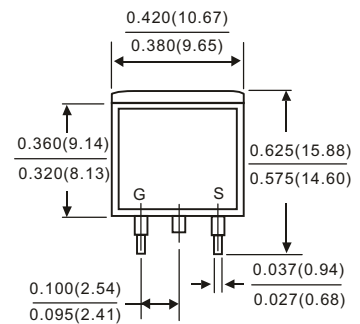


Applications

- ◆ Backlighting
- ◆ Power Converters
- ◆ Synchronous Rectifiers



Dimensions in inches and (millimeters)



Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	150	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous @ $T_C = 25^\circ\text{C}$	I_D	100	A
Drain Current-Pulsed @ $T_C = 25^\circ\text{C}$ ^{Note1}	I_{DM}	200	A
Maximum Power Dissipation	P_D	250	W
Storage Temperature Range	T_{STG}	-55 to +150	°C
Operating Junction Temperature Range	T_J	-55 to +150	°C
Thermal Resistance, Junction-to-Case ^{Note2}	$R\theta_{JC}$	0.5	°C/W





Electrical Characteristics @ T_J = 25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
OFF Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V , I _{DS} =250μA	150	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{GS} =0V , V _{DS} =120V	-	-	1	μA
Gate-Body Leakage	I _{GSS}	V _{GS} =±20V , V _{DS} =0V	-	-	±100	nA
ON Characteristics						
Gate Threshold Voltage	V _{TH}	V _{DS} =V _{GS} , I _{DS} =250μA	3	-	4.5	V
Drain-Source On-State Resistance	R _{DS}	V _{GS} =10V , I _{DS} =100A	-	-	12	mΩ
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =30V	-	4950	-	pF
Output Capacitance	C _{oss}	V _{GS} =0V	-	600	-	
Reverse Transfer Capacitance	C _{rss}	Freq.=1MHz	-	130	-	
Switching Characteristics						
Turn-On Delay Time	t _{d(on)}	V _{DS} =50V V _{GS} =10V I _{DS} =10A	-	22	-	ns
Rise Time	t _r		-	24	-	
Turn-Off Delay Time	t _{d(off)}		-	49	-	
Fall Time	t _f		-	10	-	
Total Gate Charge at 10V	Q _g	V _{DS} =50V	-	93	-	nC
Gate to Source Gate Charge	Q _{gs}	V _{GS} =10V	-	25	-	
Gate to Drain "Miller" Charge	Q _{gd}	I _{DS} =10A	-	27	-	
Drain-Source Diode Characteristics						
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V , I _S =1A	0.4	-	1.0	V

Notes:

1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle > 2%.

2. R_{θJA} is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins.

R_{θJC} is guaranteed by design while R_{θCA} is determined by the user's board design. R_{θJA} shown below for single device operation on FR-4 in still air.



Typical Characteristics

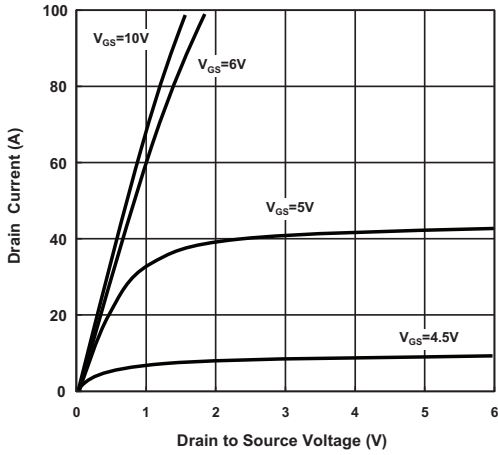


Fig 1. Typical Output Characteristics

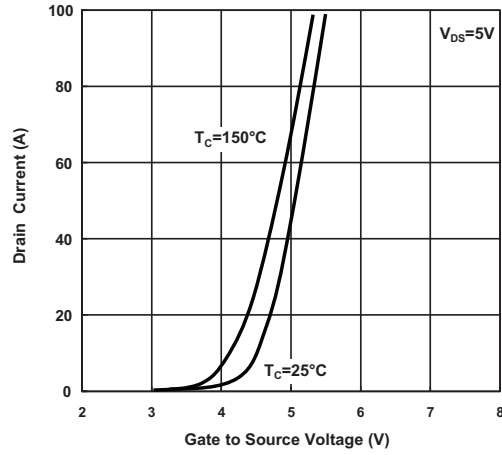


Fig 2. Transfer Characteristics

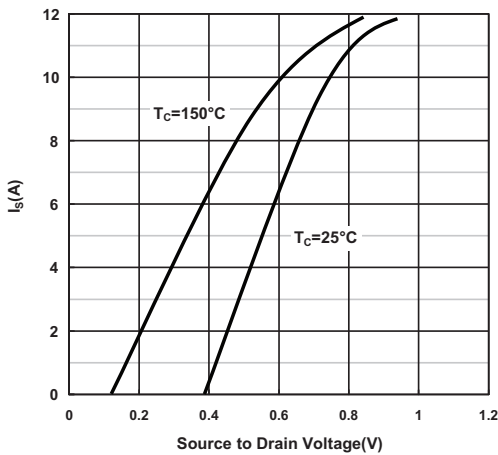


Fig 3. Body-Diode Characteristics

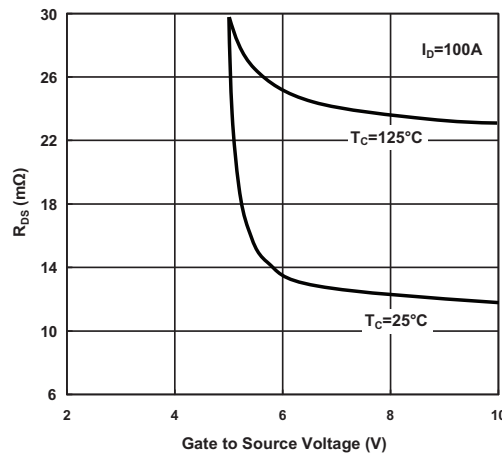


Fig 4. On-Resistance vs. Gate-to-Source Voltage.

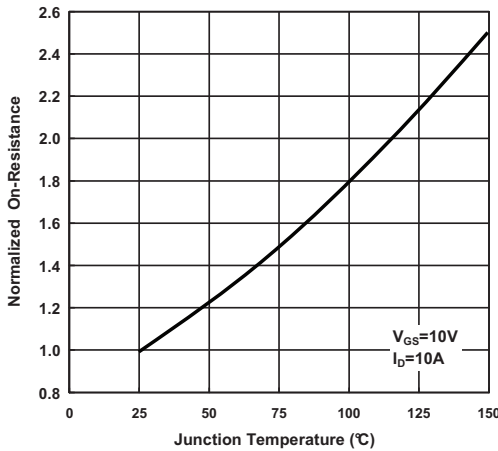


Fig 5. On-Resistance vs. Temperature

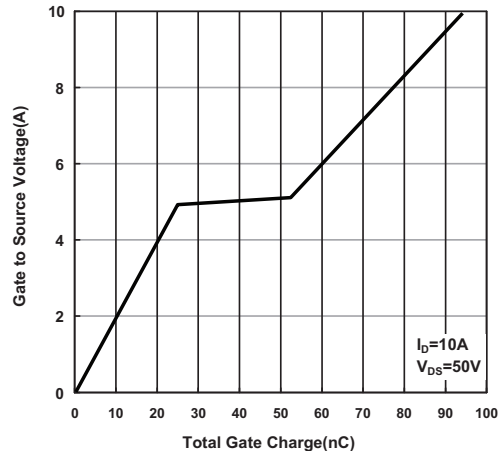


Fig 6. Gate-Charge Characteristics



Typical Characteristics

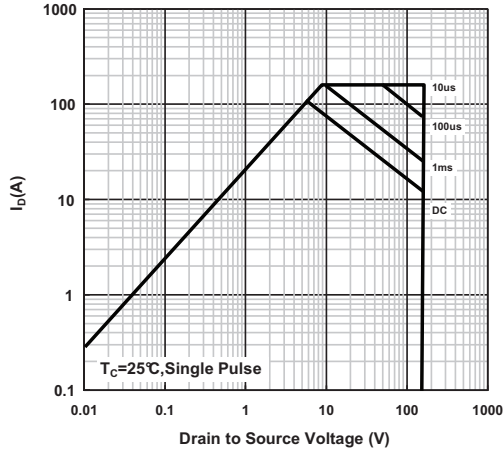


Fig 7. Maximum Safe Operating Area.

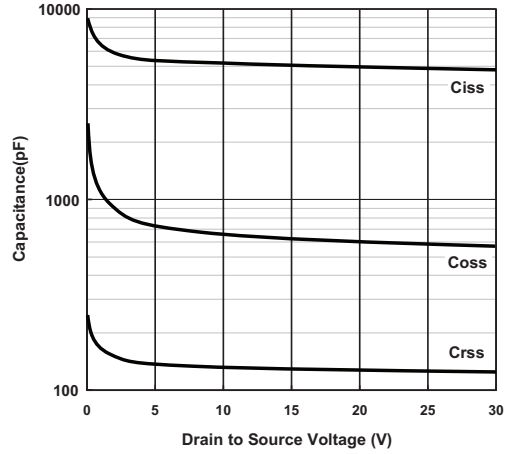


Fig 8. Capacitance Characteristics

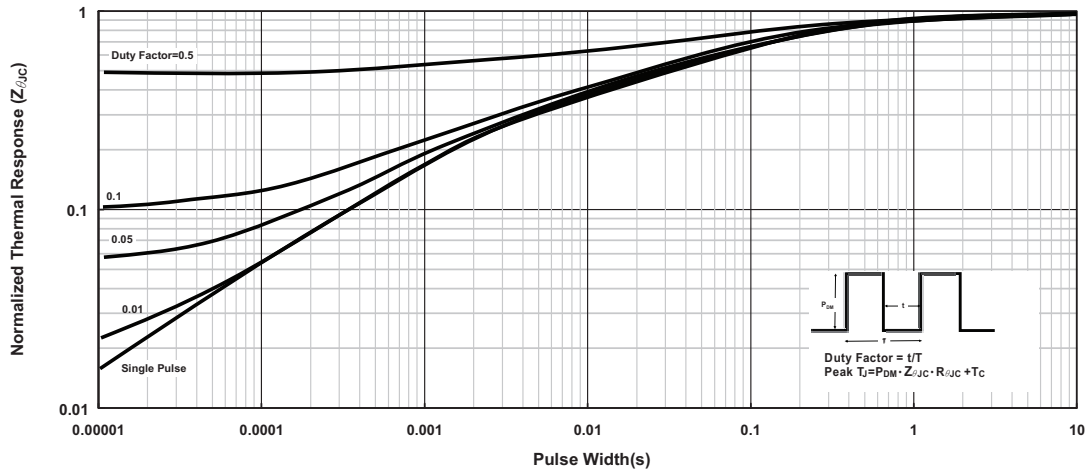


Fig 9. Transient Thermal Response Curve.