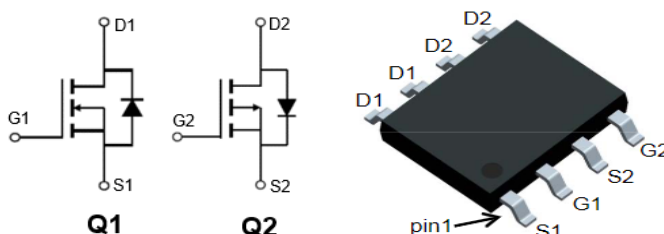


Features

- High Speed Power Switching Logic Level
- Enhanced Body diode dv/dt capability
- Enhanced Avalanche Ruggedness
- 100% UIS Tested, 100% Rg Tested
- Lead Free, Halogen Free
- Synchronous Rectification in SMPS
- Hard Switching and High Speed Circuit
- DC/DC in Telecoms and Inductria

BVDSS	RDSON	ID
40V	34mΩ	10A
-40V	54 mΩ	-7A

SOP8



Ordering Information

Device	package	Device Marking	Package Qty.
DTM4602B	SOP-8	**	3000/PCS

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

Parameter	Symbol	Value(Q1)	Value(Q2)	Unit
Drain-Source Voltage (V _{GS} =0V)	V _{DS}	40	-40	V
Gate-Source Voltage (V _{GS} =0V,static)	V _{GS}	±20	±20	V
Continuous Drain Current (T _C =25°C)	I _D	10	-7	A
Continuous Drain Current (T _C =100°C)		7	-5	A
Pulesd Drain Current	I _{DM}	48	-40	A
Single Pulsed Avalanche Energy	E _{AS}	15	21	mJ
Maximum Power Dissipation (T _C =25°C)	P _D	4	4.5	W
Operating,Storage Temperature Range	T _J ,T _{STG}	-55~150	-55~150	°C

Q1:Electrical Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	40	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =40V, V _{GS} =0V	-	-	1	μA
Gate -Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	1.1	1.5	1.9	V
Drain-Source On-stage Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =1A	-	28	34	mΩ
		V _{GS} =4.5V, I _D =1A	-	32	40	
Body Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _{SD} =1A	-	0.7	1	V

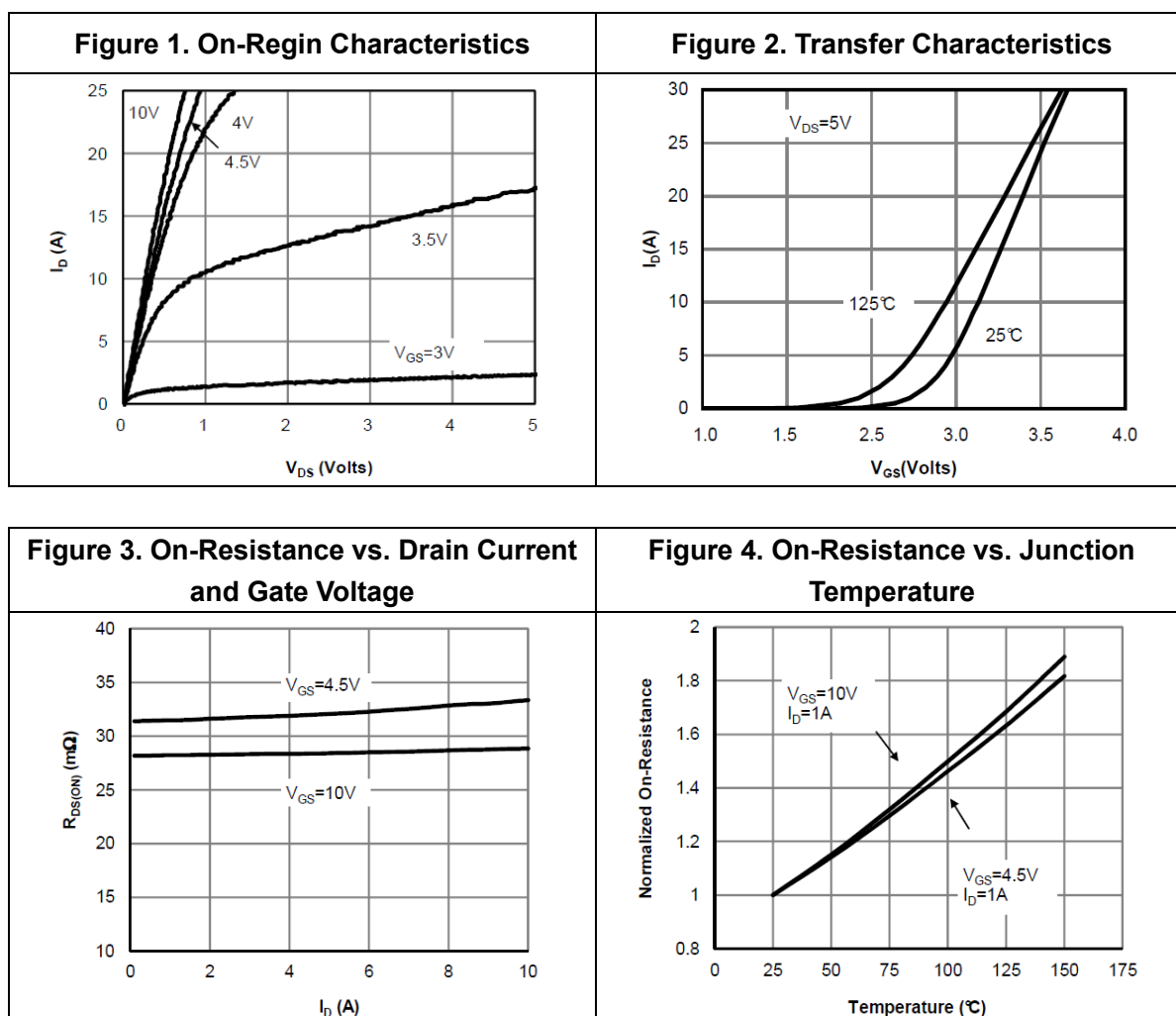
Thermal Characteristics

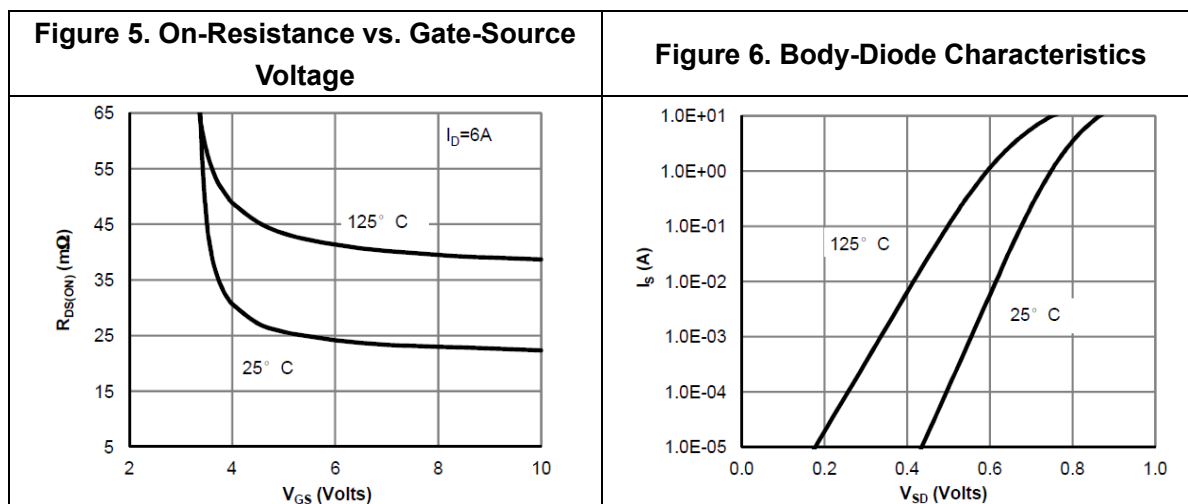
Parameter	Symbol	Typ.	Max.	Unit
Thermal Resistance,Junction-to-Case	R _{θJC}	14	-	°C/ W
Thermal Resistance,Junction-to-Ambient	R _{θJA}	63	-	°C/ W

Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input capacitance	C_{iss}	$V_{DS}=20V$	-	556	-	pF
Output capacitance	C_{oss}	$V_{GS}=0V$	-	82	-	
Reverse transfer capacitance	C_{rss}	$f=1MHz$	-	76	-	
Gate Resistance	R_g	$f=1MHz$	-	3.9	-	Ω
Total Gate Charge	Q_g	$V_{DS}=20V$	-	10	-	nC
Gate Source Charge	Q_{gs}	$V_{GS}=10V$	-	3.2	-	
Gate Drain Charge	Q_{gd}	$I_D=6A$	-	2	-	
Turn-on delay Time	$t_{d(on)}$	$V_{GS}=10V$	-	5	-	ns
Rise time	t_r	$V_{DS}=20V$	-	3	-	
Turn-off delay Time	$t_{d(off)}$	$R_L=3.2\Omega$	-	16	-	
Fall time	t_f	$R_G=3\Omega$	-	6	-	
Reverse Recovery Time	t_{rr}	$V_{GS}=0V, I_{SD}=6A$	-	10	-	ns
Reverse Recovery Charge	Q_{rr}	$dI/dt=500A/\mu s$	-	13	-	nC

Q1:Electrical Characteristics Diagrames



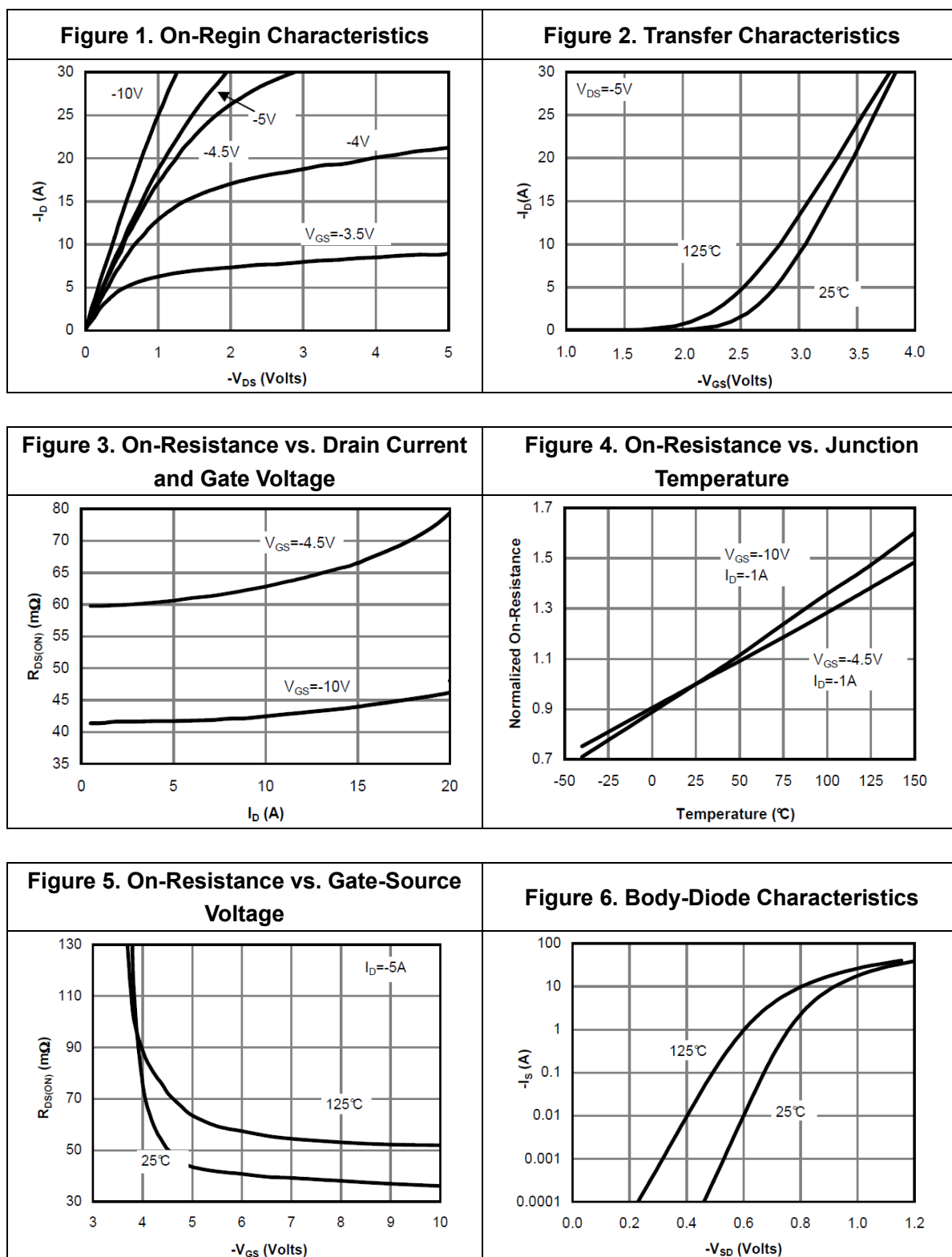


Q2:Electrical Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-40	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-40V, V_{GS}=0V$	-	-	-1	μA
Gate -Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.1	-1.5	-1.9	V
Drain-Source On-stage Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-1A$	-	42	54.5	mΩ
		$V_{GS}=-4.5V, I_D=-1A$	-	60	78	
Body Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_{SD}=-1A$	-	-0.7	-1	V

Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input capacitance	C_{iss}	$V_{DS}=-20V$ $V_{GS}=0V$ $f=1MHz$	-	980	-	pF
Output capacitance	C_{oss}		-	92	-	
Reverse transfer capacitance	C_{rss}		-	75	-	
Gate Resistance	R_g	$f=1MHz$	-	8.9	-	Ω
Total Gate Charge	Q_g	$V_{DS}=-20V$ $V_{GS}=-10V$ $I_D=-5A$	-	17	-	nC
Gate Source Charge	Q_{gs}		-	3.5	-	
Gate Drain Charge	Q_{gd}		-	3	-	
Turn-on delay Time	$t_{d(on)}$	$V_{GS}=-10V$ $V_{DS}=-20V$ $R_L=4\Omega$ $R_G=3\Omega$	-	6.5	-	ns
Rise time	t_r		-	7.8	-	
Turn-off delay Time	$t_{d(off)}$		-	45	-	
Fall time	t_f		-	40	-	
Reverse Recovery Time	t_{rr}	$V_{GS}=0V, I_{SD}=-5A$ $d_i/d_t=500A/\mu s$	-	22	-	ns
Reverse Recovery Charge	Q_{rr}		-	15	-	nC

Q2:Electrical Characteristics Diagrames


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