



TXY8205

Dual N CHANNEL High Density Trench MOSFET

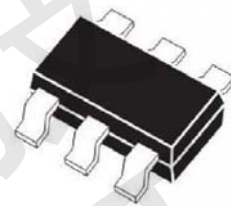
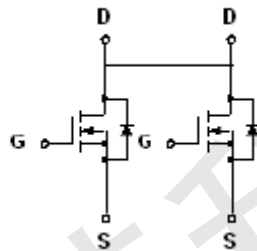
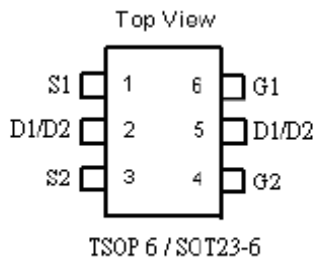
TYPE	BVDSS	RDS(ON)	ID
TXY8205	20V	25mΩ@VGS=4.5V	6A
		40mΩ@VGS=2.5V	5A



RoHS*
COMPLIANT

Green Product

PIN DESCRIPTION



FEATURES

- High Density cell trench design for low Rds(on)
- Rugged and reliable
- Surface Mount package
- Lead Free Available(Green Product)

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V _{DSS}	Drain-Source Voltage (V _{GS} =0V)	20	V
V _{GSS}	Gate- source Voltage	±12V	V
I _D (a)	Drain Current (continuous) at T _c = 25 °C	6	A
I _D	Drain Current (continuous) at T _c = 100 °C	2.4	A
I _{DM} (b)	Drain Current (pulsed)	24	A
P _{tot}	Total Dissipation at T _c = 25 °C	1.25	W
T _{stg}	Storage Temperature	- 55~175	°C
T _j	Max. Operating Junction Temperature		

(a) Current limited by package

(b) Pulse width limited by safe operating area

THERMAL DATA

R _{thj-amb}	Thermal Resistance Junction-ambient	Max	100	°C / W
----------------------	-------------------------------------	-----	-----	--------



ELECTRICAL CHARACTERISTICS ($T_{case} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

OFF

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
BV _{DSS}	Drain-source Breakdown Voltage	$I_D = 250\text{ }\mu\text{A}$, $V_{GS} = 0\text{V}$	20			V
I _{DSS}	Zero Gate Voltage Drain Current ($V_{GS} = 0\text{V}$)	$V_{DS} = 16\text{V}$			1	μA
I _{GSS}	Current ($V_{DS} = 0\text{V}$)	$V_{GS} = \pm 12\text{V}$			± 100	nA

ON

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V _{GS(th)}	Gate Threshold Voltage	$V_{DS} = V_{GS}$, $I_D = 250\text{ }\mu\text{A}$	0.5	0.7	1.2	V
R _{DS(on)}	Static Drain-source On Resistance	$V_{GS} = 4.5\text{V}$, $I_D = 6\text{A}$		23	25	m Ω
		$V_{GS} = 2.5\text{V}$, $I_D = 5\text{A}$		34	40	m Ω

DYNAMIC

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
C _{iss}	Input Capacitance	$V_{DS} = 10\text{V}$, $f = 1\text{ MHz}$, $V_{GS} = 0\text{V}$		595		PF
C _{oss}	Output Capacitance				140	PF
C _{rss}	Reverse Transfer Capacitance				125	PF



TXY8205

ELECTRICAL CHARACTERISTICS (continued)

SWITCHING ON

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
td (on)	Turn-on Delay Time	$V_{DD} = 10V, I_D = 6A, R_g = 3\Omega$		3.5		ns
tr	Rise Time	$V_{GS} = 4.5V$		13.5		ns
Qg	Total Gate Charge	$V_{DD} = 10V, I_D = 6A, V_{GS} = 4.5V$		21		nc
Qgs	Gate-Source Charge			1.3		nc
Qgd	Gate-Drain Charge			3.3		nc

SWITCHING OFF

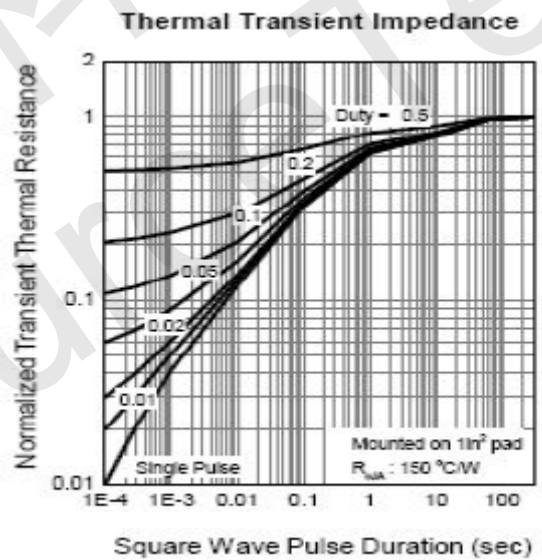
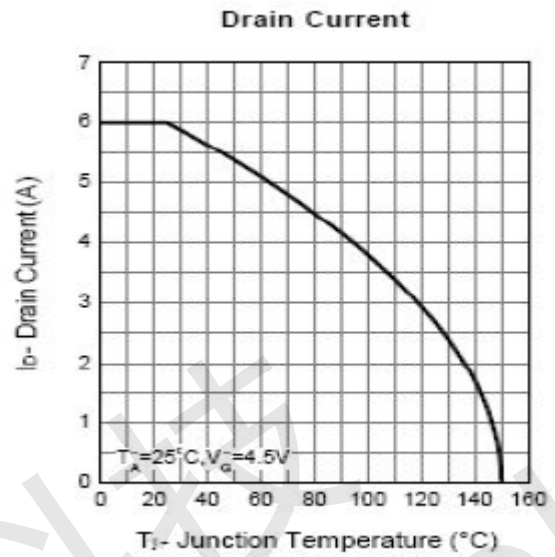
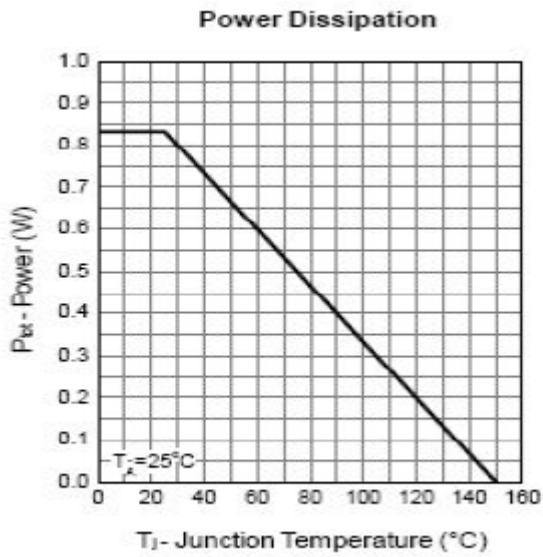
Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
td (off)	Turn-off Delay Time	$V_{DD} = 10V, I_D = 6A, R_g = 3\Omega$		32		ns
tf	Fall Time	$V_{GS} = 4.5V$		6.6		ns

SOURCE DRAIN DIODE

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
IS	Continuous source-drain diode current	$T_c = 25^\circ C$			6	A
Trr	Body diode reverse recovery Time	$I_F = 6A, di/dt = 100A/\mu s, T_j = 25^\circ C$		14		nS
Qrr	Body diode reverse recovery charge				5	
VSD	Forward On Voltage	$I_{SD} = 1.0A, V_{GS} = 0V$		0.78	1.2	V



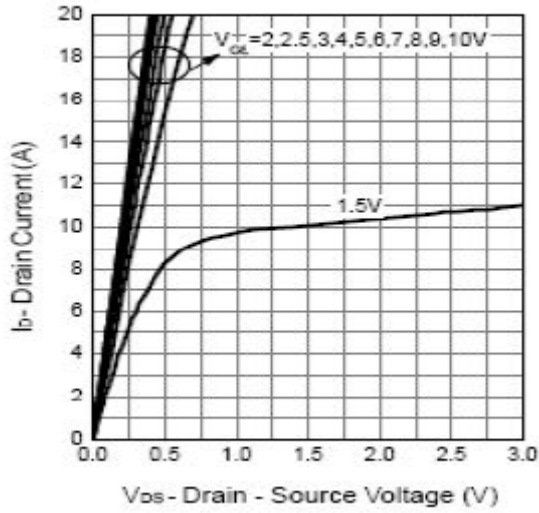
TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS



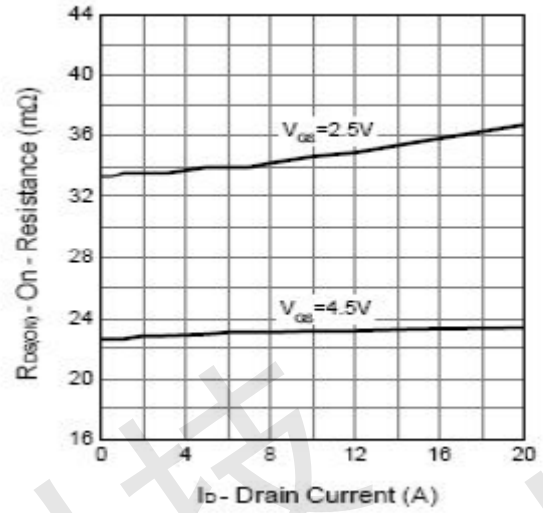


TXY8205

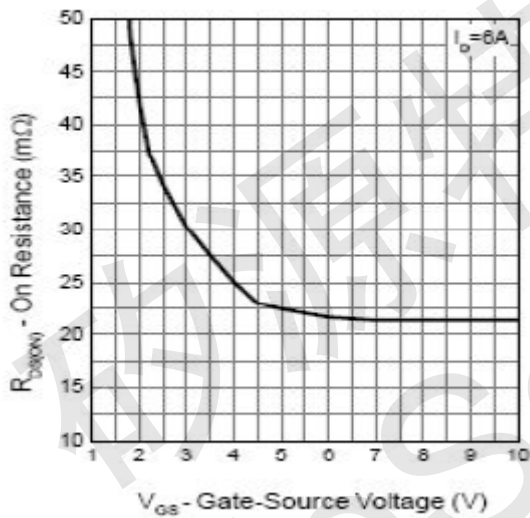
Output Characteristics



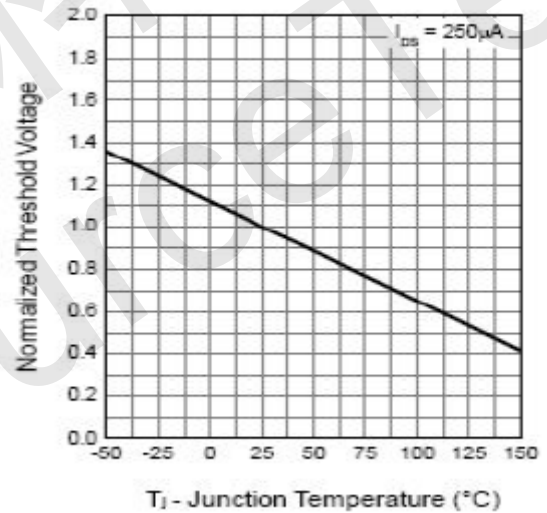
Drain-Source On Resistance



Drain-Source On Resistance



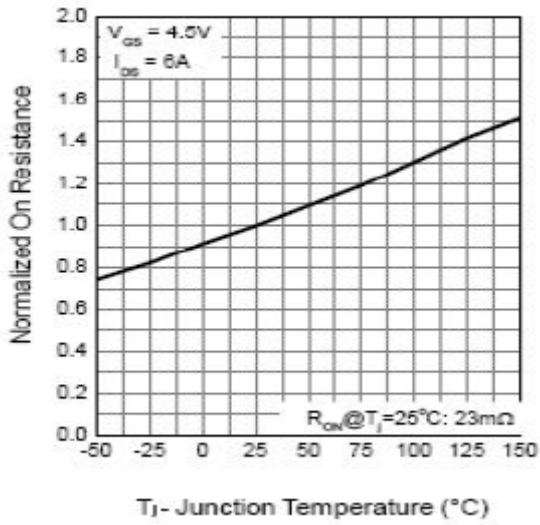
Gate Threshold Voltage



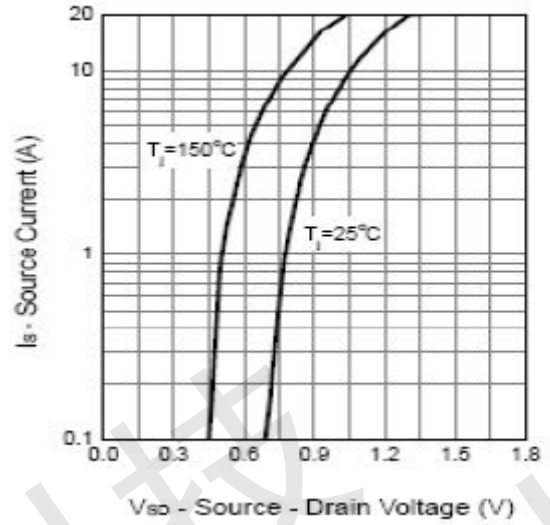


TXY8205

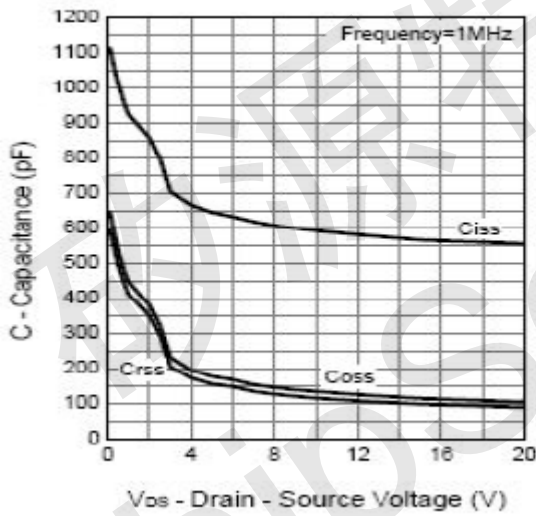
Drain-Source On Resistance



Source-Drain Diode Forward



Capacitance



Gate Charge

