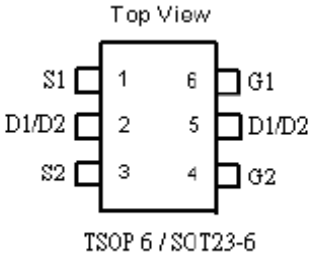
TXY8205

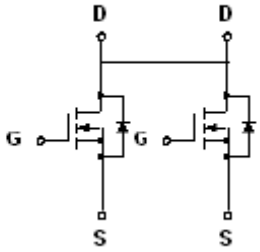
Dual N CHANNEL High Density Trench MOSFET

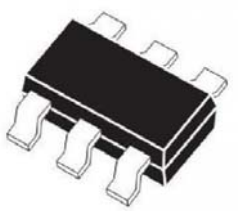
TYPE	BVDSS	RDS(ON)	ID
TXY8205	20V	25mΩ@VGS=4.5V	6A
		40mΩ@VGS=2.5V	5A

Pb-free Available
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
VDSS	Drain-Source Voltage (VGS=0V)	20	V
VGSS	Gate- source Voltage	±12V	V
ID (a)	Drain Current (continuous) at TC = 25 ℃	6	A
ID	Drain Current (continuous) at TC = 100 ℃	2.4	A
IDM (b)	Drain Current (pulsed)	24	A
Ptot	Total Dissipation at TC = 25 ℃	1.25	W
Tstg	Storage Temperature	- 55~175	℃
Tj	Max. Operating Junction Temperature		

(a) Current limited by package
(b) Pulse width limited by safe operating area

THERMAL DATA

Rthj-amb	Thermal Resistance Junction-ambient	Max	100	℃ / W

ELECTRICAL CHARACTERISTICS (T_{case} = 25 ℃ unless otherwise specified)

OFF

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
BV_{DSS}	Drain-source Breakdown Voltage	I_D = 250 uA , V_{GS} = 0V	20			V
I_{DSS}	Zero Gate Voltage Drain Current (V_{GS} = 0V)	V_{DS} = 16V			1	uA
I_{GSS}	Current (V_{DS} = 0V)	V_{GS} =± 12V			±100	nA

ON

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

DYNAMIC

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Ciss	Input Capacitance	V_{DS} = 10V , f = 1 MHz , V_{GS}=0V		595		PF
Coss	Output Capacitance			140		PF
Crss	Reverse Transfer Capacitance			125		PF

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 , Rg=3Ω		3.5		ns
tr	Rise Time	V_{GS} =4.5V		13.5		ns
Qg	Total Gate Charge	V_{DD} = 10V , I_D =6 A , V_{GS} = 4.5V		21		nc
Qgs	Gate-Source Charge			1.3		nc
Qgd	Gate-Drain Charge			3.3		nc

SWITCHING OFF

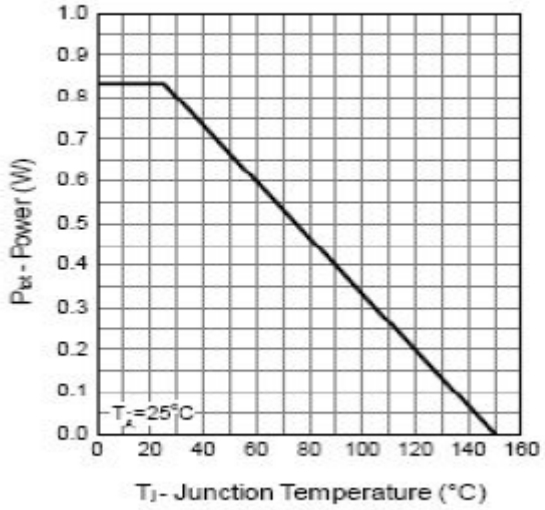
Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
td (off)	Turn-off Delay Time	V_{DD} = 10V , I_D =6A , Rg=3Ω		32		ns
tf	Fall Time	V_{GS} =4.5V		6.6		ns

SOURCE DRAIN DIODE

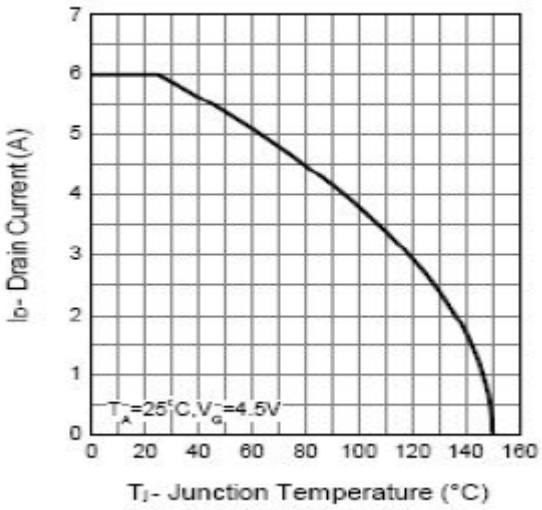
Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
IS	Continuous source-drain diode current	T_C= 25℃			6	A
Trr	Body diode reverse recovery Time	IF=6A , di/dt = 100A/us , Tj=25℃		14		nS
Qrr	Body diode reverse recovery charge			5		nC
VSD	Forward On Voltage	ISD =1.0 A , V_{GS} = 0V		0.78	1.2	V

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

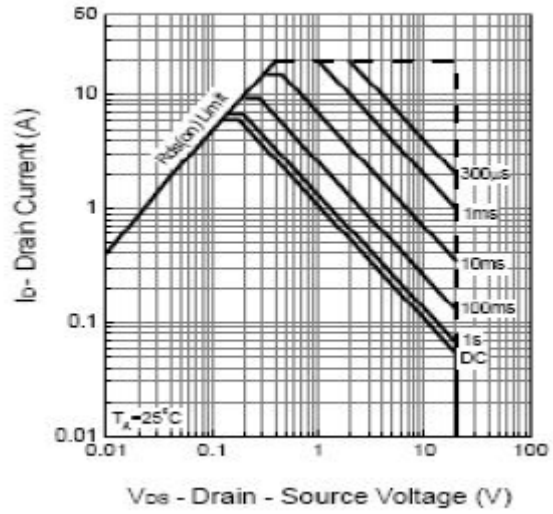
Power Dissipation



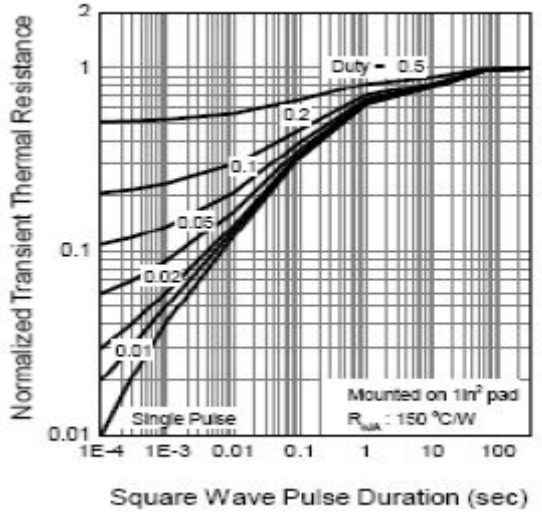
Drain Current



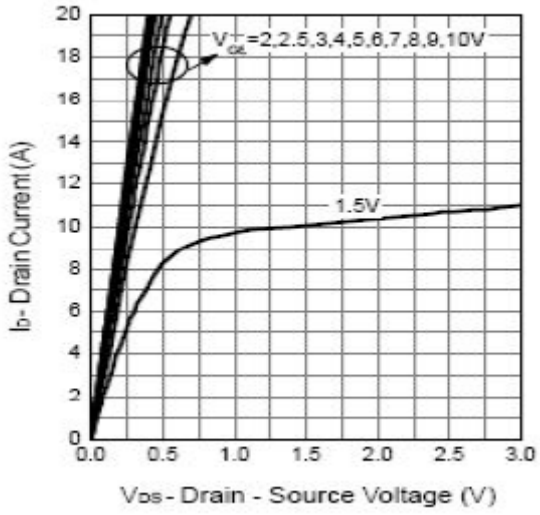
Safe Operation Area



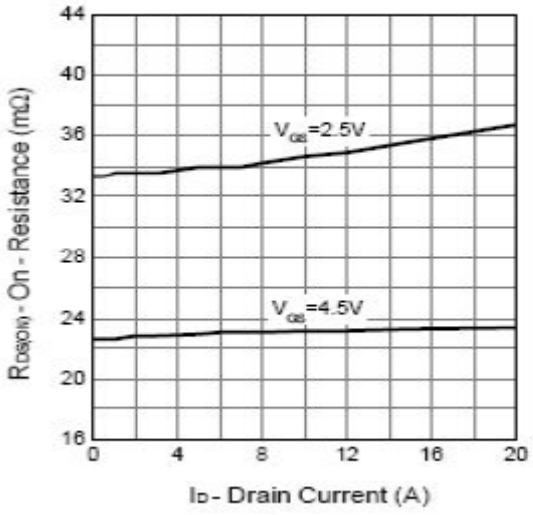
Thermal Transient Impedance



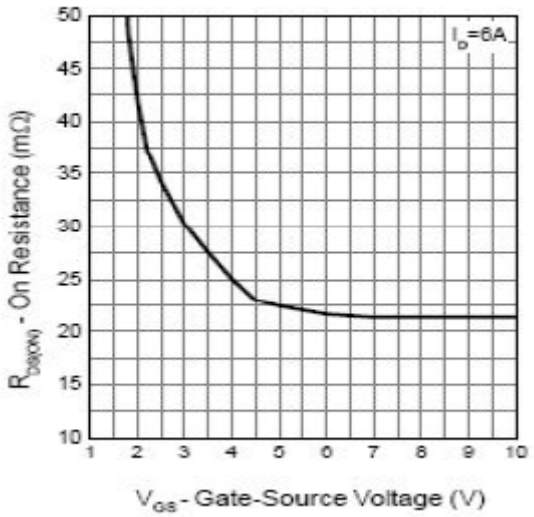
Output Characteristics



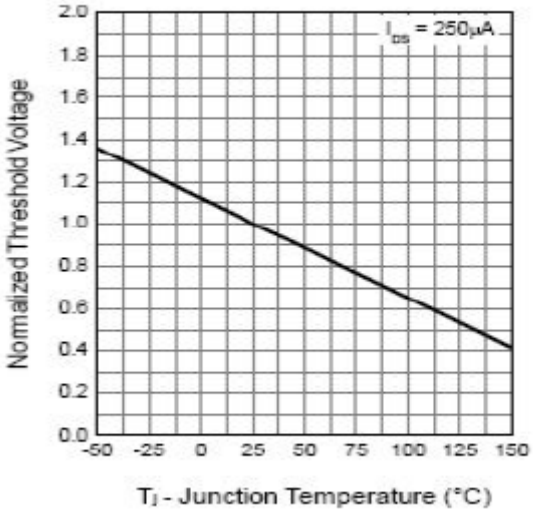
Drain-Source On Resistance



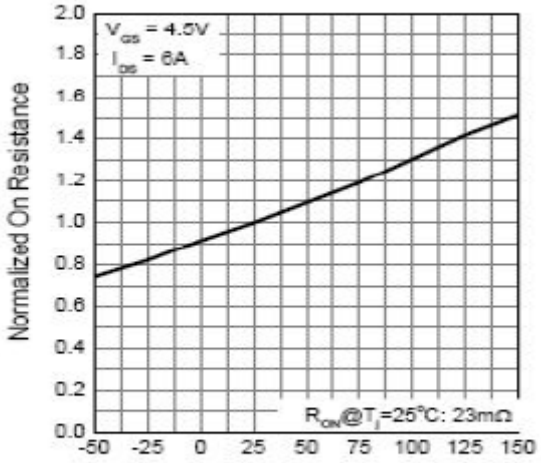
Drain-Source On Resistance



Gate Threshold Voltage

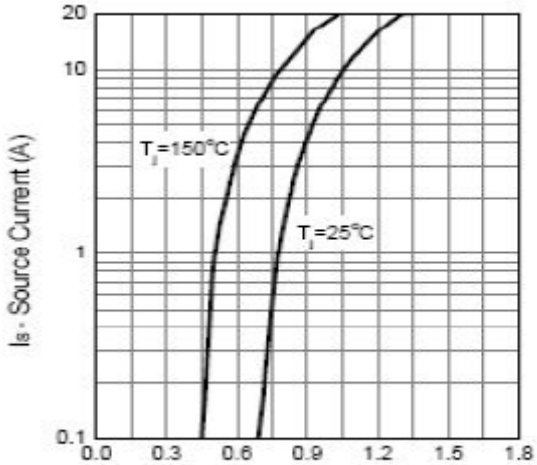


Drain-Source On Resistance



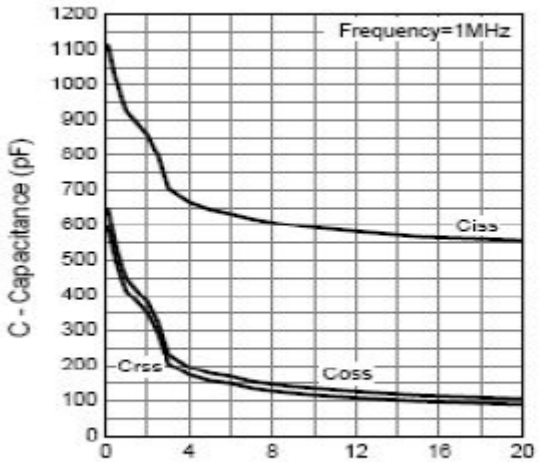
T_J - Junction Temperature (°C)

Source-Drain Diode Forward



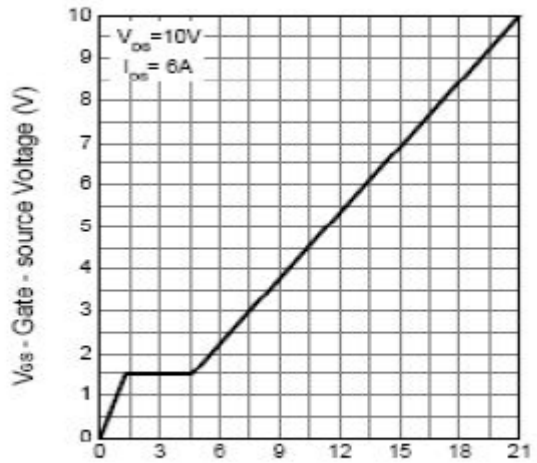
V_{SD} - Source - Drain Voltage (V)

Capacitance



V_{DS} - Drain - Source Voltage (V)

Gate Charge



Q_G - Gate Charge (nC)