TOSHIBA Field Effect Transistor Silicon N Channel MOS Type $(\pi$ -MOSII $^{\cdot 5})$

2SK2274

Chopper Regulator, DC-DC Converter and Motor Drive Applications

 $\begin{array}{ll} \bullet & Low\ drain-source\ ON\ resistance & : R_{DS}\ (ON) = 1.5\Omega\ (typ.) \\ \bullet & High\ forward\ transfer\ admittance & : |Y_{fs}| = 2.5\ S\ (typ.) \\ \bullet & Low\ leakage\ current & : I_{DSS} = 300\ \mu A\ (max)\ (V_{DS} = 640\ V) \\ \bullet & Enhancement-mode & : V_{th} = 1.5 {\sim} 3.5\ V\ (V_{DS} = 10\ V,\ I_{D} = 1\ mA) \\ \end{array}$

Maximum Ratings (Ta = 25°C)

Characteri	stics	Symbol	Rating	Unit	
Drain-source voltage		V_{DSS}	700	V	
Drain-gate voltage (R _{GS} = 20 kΩ)		V_{DGR}	700	V	
Gate-source voltage		V _{GSS}	±30	V	
Drain current	DC (Note 1)	I _D	5	Α	
	Pulse (Note 1)	I_{DP}	15	Α	
Drain power dissipatio	n (Tc = 25°C)	P_{D}	45	W	
Channel temperature		T _{ch}	150	°C	
Storage temperature range		T _{stg}	-55~150	°C	

Thermal Characteristics

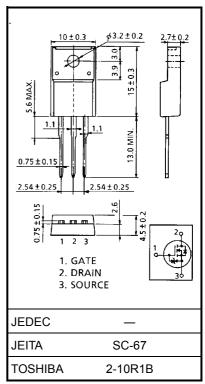
Characteristics	Symbol	Max	Unit
Thermal resistance, channel to case	R _{th (ch-c)}	2.77	°C/W
Thermal resistance, channel to ambient	R _{th (ch-a)}	62.5	°C/W

Note 1: Please use devices on condition that the channel temperature is below 150°C.

This transistor is an electrostatic sensitive device.

Please handle with caution.

Unit: mm



Weight: 1.9 g (typ.)

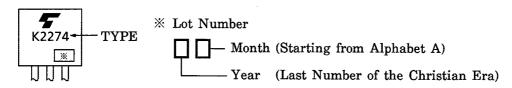
Electrical Characteristics (Ta = 25°C)

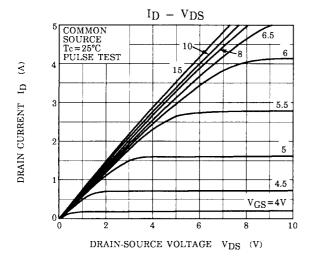
Charac	teristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Gate leakage cu	rrent	I _{GSS}	V _{GS} = ±30 V, V _{DS} = 0 V	_	_	±100	nA
Drain cut-off cur	rent	I _{DSS}	V _{DS} = 640 V, V _{GS} = 0 V	_	_	300	μA
Drain-source br	eakdown voltage	V (BR) DSS	I _D = 10 mA, V _{GS} = 0 V	700	_	_	V
Gate threshold v	oltage	V _{th}	V _{DS} = 10 V, I _D = 1 mA	1.5	_	3.5	V
Drain-source OI	N resistance	R _{DS} (ON)	V _{GS} = 10 V, I _D = 2 A	_	1.5	1.7	Ω
Forward transfer	admittance	Y _{fs}	V _{DS} = 20 V, I _D = 2 A	1.0	2.5	_	S
Input capacitano	е	C _{iss}	V _{DS} = 10 V, V _{GS} = 0 V, f = 1 MHz		610	_	pF
Reverse transfer	capacitance	C _{rss}			60	_	
Output capacitar	Output capacitance C _{oss}		_	110	_		
Switching time	Rise time	t _r	$V_{GS} = V_{OUT}$	_	55	_	
	Turn-on time	t _{on}		_	80	_	20
	Fall time	t _f		_	65	_	ns
	Turn-off time	t _{off}	$V_{DD} = 400V$ Duty $\leq 1\%$, $t_{\mathbf{w}} = 10 \mu s$	_	240	_	
Total gate charg plus gate-drain)	e (Gate-source	Qg			44	_	
Gate-source charge		Q _{gs}	$V_{DD} = 400 \text{ V}, V_{GS} = 10 \text{ V}, I_D = 5 \text{ A}$		20	_	nC
Gate-drain ("miller") charge		Q _{gd}			24		

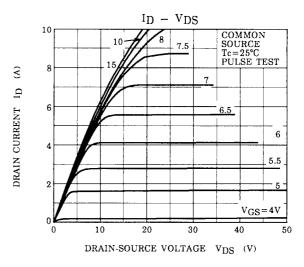
Source-Drain Ratings and Characteristics (Ta = 25°C)

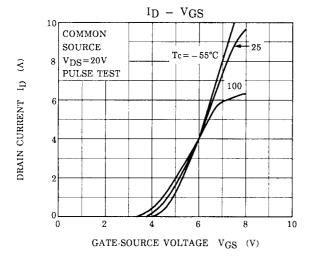
Characteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Continuous drain reverse current (Note 1)	I _{DR}	_		_	5	Α
Pulse drain reverse current (Note 1)	I _{DRP}	_		_	15	Α
Forward voltage (diode)	V _{DSF}	I _{DR} = 5 A, V _{GS} = 0 V	_	_	-1.9	V
Reverse recovery time	t _{rr}	I _{DR} = 5 A, V _{GS} = 0 V	_	520		ns
Reverse recovered charge	Q _{rr}	dl _{DR} / dt = 100 A / μs	_	10.4	_	μC

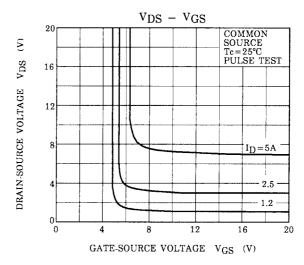
Marking

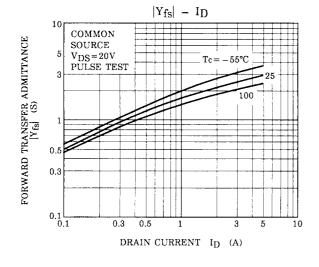


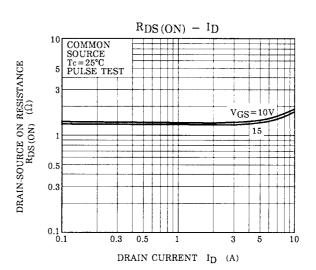




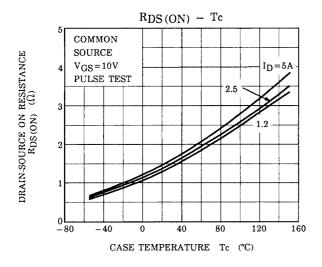


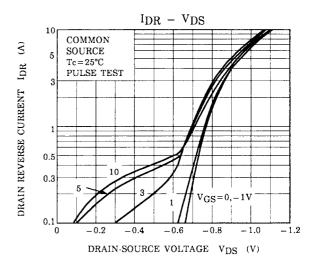


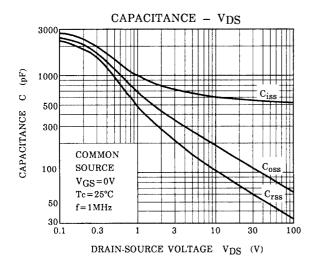


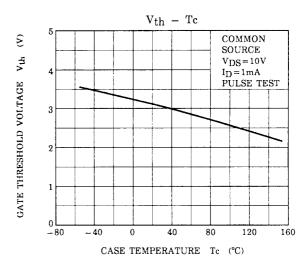


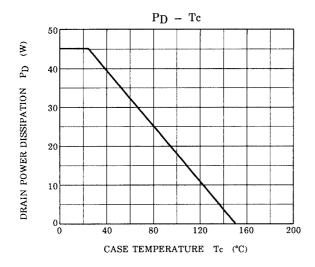
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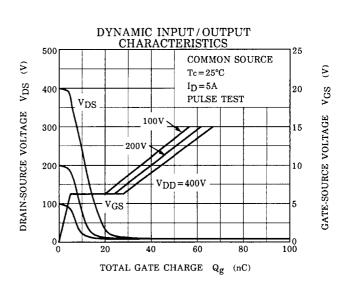


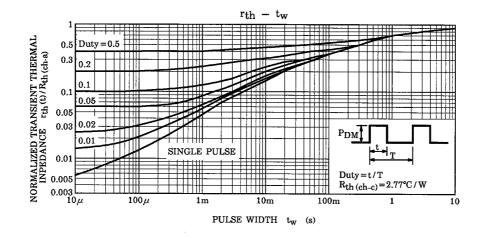


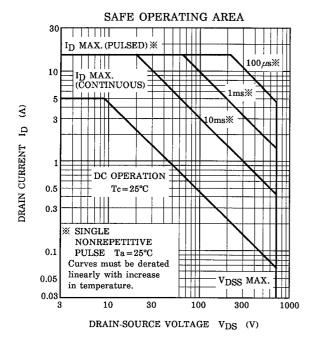












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